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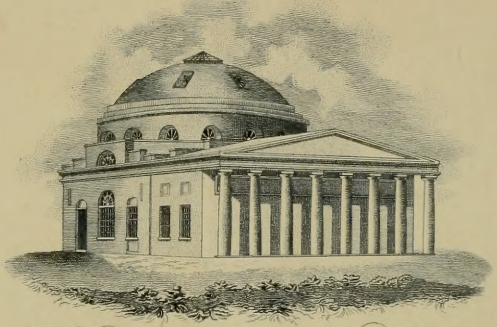

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Apoplexy

An Inaugural Dissertation

by

Zachariah Merriken

Annapolis Maryland

Spring 1828

In speaking of Apoplexy, the disease of which I am about to treat, I shall not pretend to claim originality. The disease has been called by several different names, or more properly, several diseases have been confounded with Apoplexy Viz.t Lethargus, Catalepsis, Carus, and Coma. These are supposed to be the same disease, differing in degree only; but of these it is not my intention to speak, therefore, I shall confine myself strictly to Apoplexy. The term Apoplexy has been given the disease from the suddenness of its attack, it is derived from the Greek words απο which signifies upon and πλησσω to strike suddenly. In this disease the whole of the external and internal senses and the whole of voluntary motion, are in great degree abolished, while respiration and

the 4
the action of the heart continues to be performed
it has also been called by the Latins Morbus Attoni
tus they have also called it Lideratio from a belie
that it was produced by planetary influence

Dr. Cullen has placed this genus of disease in
the class Neuroses and the order Comata he has al
taken notice of nine Genera of this disease beside the
which are sympthomatic. First Apoplexia Sanguinea
and this he defines to be universal Plethora with a
determination of blood to the head Second Apop
lexia Serosa which generally happens in ole
and Leucophlegmatic persons. Third Apoplexia
Hydrocephalica in this genus the disease is produced
by the pressure of water upon the brain Fourth

Apoplexia Atrabilaria observed in Atrabilarian or melancholic temperaments Fifth Apoplexia Traumatica when the head is injured by violent external force Sixth Apoplexia Venenata from poisonous matters whether taken internally or applied externally Seventh Apoplexia Mentalis from passion of the mind Eighth Apoplexia Cataleptica in which respiration is not stertorous and though the limbs maintain any occasional position give way to force applied to them Ninth Apoplexia Suffocata as happens from hanging or drowning.

The division of the disease into so many genera tends more to confuse than to instruct the young practitioner. Apoplexy most frequently attacks persons at an advanced age and Dr Cullen says especially

those above sixty years of age but a great majority of the cases which I have seen have occurred in persons under fifty and in those of short necks and plethoric habits and who have passed a sedentary life and used a full diet Those who have been intemperate both in ~~habit~~ diet and drink or those who have indulged in one and not in the other have been attacked by the disease The sudden suppression of an accustomed Hæmorrhage The most frequent precursory symptoms are fits of giddiness, head ache hæmorrhage from the nose some transitory interruption of vision and hearing and these two senses are also false in some cases a faultering of the tongue frequent drowsiness and repeated attacks of incubus but these precursory symptoms are by no means uniform but

for the disease in some cases suddenly attacks the patient without those symptoms having appeared but when those symptoms do occur they enable us to foresee the impending danger and to avert its fury by a proper attention to the present state of the patients system and by a due regard to regimen we may enable and if not entirely to escape this too fatal disease at least to render its attack longer than he otherwise would have done. When the disease has come on suddenly it has frequently been observed to have been induced by violent exercise this remark I have seen verified in the case of a Farmer who though for some time previous to his attack had led a very active life: had in the earlier part of his life been quite sedentary in consequence of his occupation at that time and had in the whole

of his life been a very free liver and by these two latter causes had acquired a predisposition to the disease he was of a plethoric habit answering very well the descriptions already given of those most liable to the disease This gentleman after a severe exercise of almost a whole day was suddenly attacked in the absence of any premonitory symptoms of the approach of this malady. Although says Dr Cullen the whole of the body is affected with the loss of sense and motion it sometimes takes place more upon one side than on the other and in this case the side least affected is frequently convulsed. Stertorous breathing is often present and has been supposed to indicate the violence of the disease but this is denied as it has not at all been present in a complete and most violent

state of the disease. After having thus enumerated most of the principle symptoms of the disease we will now advert to the causes and first to the proximate cause which has been defined to be whatever interrupts the motion of the nervous power of the brain to the muscles thereby destroying voluntary motion or so far as sense is affected whatever interrupts ~~the sentient extremities~~ the motion of the nervous power from the sentient extremities of the nerves to the brain. Such interruptions are said to be produced by some compression of the origin of the nerves or by something destroying the mobility of the nervous power the loss of sense and motion in particular parts of the body may be occasioned by a compressio

of the origins of the nerves going to that part or by compression of the same nerves at a point intermediate between their origins and the part diseased by such compression. Compression of the origins of the nerves may be produced in different ways viz: by a depression of a part of the Calvarium. A congestion of the vessels of the brain has also been said to have produced it but on this subject there is a contrariety of opinion. It is Dr. Nathaniel Potter's opinion that this is a frequent cause of the disease. It has on the contrary been maintained by Dr. Davidge as well as other distinguished Physiologists that a congestion of the vessels of the brain never does take place. It may be produced by tumours either of the bone or soft kind.

If compression of the origin of the nerves be from a depressed portion of the brain case it is to be removed but this operation more properly appertains to Surgery

The consideration of bony tumours and also of fleshy tumours may be omitted as in most instances they are neither to be discerned nor cured by any means. The effused fluids are of two kinds they may be either a portion of the common mass of the blood poured out by vessels carrying red blood or it may be serum or a fluid resembling serum which is poured out by the exhalants. This fluid alluded to resembling serum has been supposed not to be serum but to be a fluid changed by the action of the small vessels from which it escapes however be it serum or a changed fluid it makes no change of treatment in the disease these effusions have been said to be para-

duced by whatever ~~can~~ encreases the impetus of the flow of blood in the arteries of the head the same cause has been assigned to the congestion of the blood vessels of the brain this is a probable cause if congestion of these does ever take place but as there is a difference of opinion on this subject among the most enlightened Physiologists it therefore cannot be expected that one of my inexperiance would presume to hazard an opinion in opposition to either of the parties who thus dissent. An impediment in the free return of blood from the vessels of the brain has also been enumerated among the causes of effusion of serum. There are two other causes of this serous effusion. The one is a relaxation of the exhalants. The second is an over proportion of watery parts in the blood:

which is therefore ready to run off by the exhalants but whether compulsion be produced by a serous or a sanguine effusion the indication of cure are the same or nearly so. so besides these, other causes are taken notice of by authors as the Mephitical arising from fermenting liquors the fumes which arise from mercury lead and other metalick substances have produced it. The Modus Operandi of those noxious poisons is I think very correctly given in the 111th Sec: of the 1st Book of the practice by Dr Cullen and I think it will not be amiss here to transcribe it I believe says the Dr their immediate and direct action to be on the nervous power destroying its motility because the same poisons shew their power in destroying the

irritability of the muscles and of the nerves connected with them when both of these are entirely seperate from the rest of the body. Having thus taken notice of the chief causes of Apoplexy and of its symptoms I shall now proceed to give the treatment when there is evidently a predisposition to the disease all exciting causes ought carefully to be avoided the most common causes of the disease have been already stated the immoderate use of spirituous liquors ought also to be carefully avoided an indulgence of the appetite in high seasoned dishes must be restricted in short all the causes calculated to induce plethora should be avoided but when this Plethora or in other words this predisposition to Apoplexy is either hereditary or is acquired by intemperance in eating or drinking temperate

should be employed for its cure if it be produced by intemperance the cause should be removed and bloodletting and abstinence from animal food should be enforced. The mode of bloodletting has been considered of importance some have recommended it to be taken from the Jugular vein from the temporal Artery &c the opperation of Arteria Section has also been thought more effectual when performed in the side opposite to that most effected but I think for the sake of dispatch the arm most convenient to the Physician should be bled from. Purging is also a very important remedy this should be attempted by stimulating injections and if the powers of deglutition remain active Cathartics should be administered Emetics have been recommended but these have been

objected to on the presumption that it would impel the blood to the brain with so much violence as to rupture the vessels or if they are already ruptured to cause a more copious effusion where the stomach contains a heavy meal it will generally be ejected from the stomach. if a considerable quantity of blood be drawn from the arm or jugular vein or from any convenient and safe vessel and in this case very beneficial effects have resulted. blistering has been recommended but I think an important remedy in the early stage of the disease Stimulants have been almost universally employed but I think these might be employed advantageously

in cases of suspended animation but do not think them useful or their employment warrantable in Apoplexy as the violent efforts in vomiting will as before stated impel the blood to the brain with so much violence as to increase the effusion or rupture the vessels which are not yet ruptured. If a poison introduced into the stomach produces Apoplexy and if a spontaneous vomiting occurs it should be encouraged by draughts of tepid water and by the remedies usually recommended in cases of poison. If stimulants in the later periods of the disease become necessary they are to be employed and the most proper will naturally be-

resorted to by the skillfull and judicious practitioner The affusion of cold water has been the right to be of much value in rousing a person from the insensible state. When there is a full habits or a plethora existing the spear if applied to the back of the neck has been useful in overcoming this predisposition so also is a section introduced into the back of the neck these are merely used for the prevention of Apoplexy but when Apoplexy seriously threatens there is nothing which can be substituted for copious Venæ section. If Apoplexy actually does occur bleeding is immediately to be employed and

if as above stated the powers of deglutition remain
to the patient cathartics should be administered
and their operation promoted by injections.
cuping the temples also leeching may be employ
ed with good effect. rest should be strenuously
enforced the head being considerably raised by
pillows above the level of the body and if the
patient recovers a total avoidance of the pre
disponent causes and likewise of plethora should be
strictly adhered to by the patient. A paroxysm
of deep intoxication has been confounded with
Apoplexy but may be distinguished generally by the history of the case and by the
smell of liquor being perceptible in the

breath deep sleep resembles it in some degree but is readily distinguished by the patient being aroused by the application of volatiles applied to the nose by pinching or by calling him in a loud tone of voice it is also confound with Palsy and Syncope but is distinguished from the former by its being an affection of the whole of the powers of sense and voluntary motion and from Syncope by its being attended with the continuance of respiration and the action of the heart

An Inaugural Dissertation
Submitted to the examination
of the Provost and medical
Professors of the University of
Maryland,

by their friend

Alfred Hudnall

of Northumberland County Virginia

in the year of our Lord A.C. 5828. A.D. 1828

The following lines are respectfully dedicated to the Medical Professors in the University of Maryland — as a small tribute of regard and esteem entertained for them, both as private individuals and public Teachers

by their friend ——

Alfred Hildreth

Remarks on Tetanus.

The disease which I am about to give a discription of, is one which has in former times excited terror in every medical Practitioner, who has the misfortune to witness a case of it.—
I mean Tetanus— A genus of disease, in the Class Neuroses, and order Spasmi, of Cullen, characterised by a spasmodic rigidity of almost the whole body.———— The varieties of this Disease which are discribed by Dr Cullen are, First, Opisthotonos when the body is violently drawn backwards, by the contraction of the Dorsal muscles— Secondly, Emprosthotonos, when the body is bent forwards— Thirdly, Pleurosthotonos, when the body is drawn to either side and Fourthly, Trismus, or locked Jaw.———— Though I consider them one, and the same disease and these distinctions of course unnecessary.

Causes.

Tetanic complaints may arise from many and various causes such as, punctures, lacerations, amputations and fractures of the Limbs— Gunshot wounds, wounds in the palms of the hands and soles of the feet by means of nails, or splinters of wood,— the Injury done to the feet by Frost, cutting the umbilical cord in new born Infants, and the sudden application of cold to the body after it has been exposed to extreme heat— It has also been sometimes induced by certain

poisonous vegetables received into the stomach— as Hemlock— Stramonium &c.——— This Disease is said to occur most frequently in warm climates, and in the warmest weather of those climates, but this is by no means a general rule, for we sometimes have it in our winters.

This Disease affects all ages, sexes, Temperaments and Complexions— but the nervous and irritible are most subject to it.——— Some have said that negroes are more predisposed to attacks of it, than white people they are more frequently affected with it but this, probably arises from their being more exposed to injuries than the whites, and not from predisposition, they are more liable to tetanus, because they are more subject to injuries as they generally go barefooted and from that circumstance are very often wounded about the feet with nails, splinters of wood, broken glass &c.&c.—

Symptoms.—

This Disease sometimes comes on suddenly to a very violent degree but more generally it approaches by slow degrees to its violent stage.

It commences with a sense of stiffnes in the back part of the neck which, goes on increasing until it renders the motion of the head difficult and painful— After the rigidity of the neck has come on there is commonly at the same time a sense of

uneasiness felt about the root of the tongue - which by degrees generally becomes a difficulty of swallowing and if the disease is not combated properly at length an entire interruption of it.
While the rigidity of the neck goes on increasing there arises a pain often very violent at the scrobiculus Cordis, and shooting from thence into the back——— When this pain arises all the muscles of the neck and particularly those of the back part of it are affected with spasm pulling the head strongly backward At the same time the masticating muscles are affected and the jaws are violently clenched, so that it is sometimes necessary to extract a tooth to introduce any thing into the stomach.——— This is what writers have named Locked jaw and is very troublesome; the tongue is sometimes very much injured by the teeth in consequence of its being thrust out of the mouth during the interval of spasm and it is in that way that it is so often injured.——— When the disease has advanced thus far the pain at the bottom of the sternum returnes very frequently— and with it the spasm of the back part of the neck. As the disease thus proceeds a greater number of muscles come to be affected

with spasm.—— In succession to those of the neeke, and jaws, those of the back bending the whole body strongly backwards and this, is what has been calex Opisthotonos.—
The muscles of the superior extremites are not the only muscles affected, for both the flexor and extensor muscles of the legs are very rigid, and the limbs are very stiff.——
During the whole of the disease the abdominal muscles are violently affected with spasm, so that the abdomen is strongly retracted and feels very hard.
At the height of the disease every organ of voluntary motion seems to be affected; and among the rest the muscles of the face: The forehead is drawn up in furrows, the eyes are sometimes distorted, are commonly rigid and immoveable in their sockets; The cheeks are drawn backwards towards the ears so that the whole countenance expresses the most violent grining, under these universal spasms a violent convulsion commonly comes on and puts an end to life.
The attacks of this Disease are seldom attended with high fever although there may be occasionally some:— And it is said, by some that at the commencement of this Disease the pulse is

often full and frequent, tense and strong.—
But I believe in the majority of cases,
there is no fever of consequence; and most
commonly the pulse is weak and quick.
In this Disease the head is seldom affected
with delerium, or confusion of thought till the
last stage of it.
In this disease I believe the natural functions
are not either immediately, or considerably
affected, however occasionally there is vomiting
in the early part of the disease but, this
generally continues a very short time;
and it is quite usual for the appetite
of hunger to remain through the whole course
of the disease, and the food that is taken,
seems to be regularly digested, however this
is in very small quantity.
The excretions are sometimes affected but not
always— The urine is sometimes suppressed, or is
voided with difficulty.
The belly is sometimes costive this I think
originates from opiates, for we have no accounts
of it unless opiates were used.
This disease until very lately generally proved
fatal, This was owing very much to the manner
in which patients were treated by the older
practitioners; For we know that until very lately

Physicians were not acquainted with a method of cure and that, since a more proper method has been known and carried into effect, many have recovered:— It may be concluded that the fatal tendency of it is not so unavoidable as has been supposed.—

In judgeing of the disease in particular cases, we may observe, that, if it comes on very rapid it is more severe than when it comes on more slowly.— (The first case of Tetanus, which I saw terminated fatally on the fourth Day.)

This disease if not properly treated, often proves fatal before the fifth, or sixth, Day, and when a patient has passed this period he may be said to be in greater safety, and in general the disease is the safer, the longer it has continued.

It is to be observed however that the Disease is dangerous for many Days after the sixth.

Treatment.

I come now to speak of the treatment which should be carried into effect with perseverance, and experience has taught us that Opium, and Mercury, has often proved an effectual remedy, but to render them so they must be given in large quantities so that we may have their full effects.

I am fully persuaided that opium is very seldom given in sufficient doses.
The practice has been, to give it either in a liquid, or solid form, not in very large doses at a time, but in moderate doses every one, two, or three hours; this practice will do if its effects are not suffered to go off, however it does not seem to opperate in this Disease, as it does in others; For although it procures some remission of the spasm, and pain, it hardly ever induses any sleep, or occasions that stupor, or delerium which it often does in other circumstances, when much smaller quantities have been given.
It is therefore observed that in this affection there should be no retailing, that it should be given by wholesale and it should be given as largely, and as frequently, as the symtoms of the Disease may seem to demand.
It must however be observed that though the first exhibition of the opium may have produced some remission of the symtoms yet, the effects of it do not long continue in the system and this disease being very ready to return, it is very necessary by the time that the effects of the opium given, are going off and especially upon the

least appearance of the return of the Spasms, to repeat the dose in the same quantities as before.— This practice should be very strictly pursued as long as ever the disease showed any disposition to return: And it is not until after the Disease has already subsisted for some time and when considerable and long continued remissions have taken place, that the doses of the Opium may be diminished and the intervals of exhibiting them, be more considerable.

Opium administered in this way, has in many cases been successful, and probably would have been so in many others if, it had not been too sparingly used, either from timidity of Practitioners or from its exhibition being prevented by that interruption of deglutition which so often attends this disease. Which latter circumstance requires that, the medicine should be immediately and largely employed upon the very first approach of the disease, before the deglutition becomes difficult or if this opportunity be lost the medicine in sufficient quantity and with due frequency should be thrown into the rectum by glysters.

It has been recommended to employ Opium with

some of the antispasmodics, such as musk, and Camphor, this I think is a very weak practice and would answer a very little better purpose than Opium alone, in one case I see opium and musk combined but it terminated fatally. Blisters to the neck were also used.— What would be the effect of Emetics in this Disease— We know, that they produce powerful effects sometimes in relaxing the muscles in spasmodic and convulsive Disorders.

The warm bath has also been spoken of as a remedy.

Purgatives has been very highly recommended by some of the Continental Practitioners.

I do not know how they would answer as I have never seen them used.

Bloodletting should not be used except in plethoric subjects.

Blistering was at one time very much used, it is asserted by some Practitioners that it is always hurtful.

Moxa has been used with decided advantage in late years, it should be applied all down the spine, and the eschars dressed with mercurial Ointment— so as to keep up a discharge for some time

Cold bathing has also been recommended by the Continental Practitioners.

I am induced to believe that not one half

of the remedies recommended are of any service. I think that wine, Opium, Moxa, and Mercury are the principal remedies to be relied on in this Disease.— Of these remedies the Wine, Opium, and Moxa, retard the progress of the Disease.— Preventing Death from exhaustion until the Mercury shall have time to eradicate it, by converting the Tetanic affection into a mercurial action.— However I should strongly recommend Opium and Wine, for without their aid the Mercury would not have time to act, although they are insufficient of themselves without mercury.

The Mercury should always have its full effects, and this effect should be kept up for some time, for if it is not the Tetanic affection will certainly return.

The Mercury should be used very extensively, applying it in large quantities in the form of Mercurial Ointment.

Tobacco has also been found useful and spoken very highly off by Dr Jackson of Northumberland in Pennsylvania— in a case which occured in his Practice— produced by an injury received on the back of the hand by a splinter of bone, the part had healed, and he made an incision into it, and applied a poultice over it, made of a strong decoction of Tobacco and linseed meal.—

He applied it from the hand to the shoulder, and changed it every six hours: a similar application was made to the scrobiculus Cordis - in order, to operate on the whole system.
In six hours, the symtoms had ameliorated, and the same means were continued with the addition of Castor oil to open the bowels - Thirty six hours from the first application, the Tobacco produced some nausia, and so much Vomiting on the third day, that the whole complaint appeared to be subdued, his stomach was now restored by cordiac nourishment - Drink. &c. Huxhams Tinct - About the same time Erysipelas of the arm came on, succeeded by Mania a Potu which rendered the use of opium, Camphor, &c. necessary. - vid. Med. Rec. Oct 1824 page 315

Prophylactics.

The best preventives of Tetanus consist in the conversion of punctured into incised wounds by means of a scalpel, or some such instrument, and the exciting of suppuration in wounds that are lacerated.
These precautions should be used immediately after the injury is received, and before the Tetanic symtoms shall have made their appearance if circumstances exist to prevent the dilatation of punctured

wounds the application of some escharotic should be used such as Ley, Corrosive Sublimate, Spirits of Turpentine, Tincture of Cantharides, and Nitrate of Silver.
These should be followed by poultises so as to bring on suppuration.
If the patient cannot swallow, food should be throwen into his stomach by means of a gumelastic tube.
This may be done by removing a tooth or two.

On

Inaugural Essay.

On

Cantharides;

Submitted To
The Examination
of the
Provost
The
Trustees & Medical Faculty
of The
University of Maryland
For The Degree of
Doctor of Medicine

By Littleton D. Handy of
Maryland

March 1828.

To

John Buckler, M.D.

Adjunct Professor of Anatomy

In The

University of Maryland

This Production

of

Youthful Thoughts

on

Medicine

Is Dedicated As

A

Tribute of Respect & Esteem

from

His Pupil

The

Author

Essay on Canthardes

Canthardes when applied to any part of the surface of the body produce inflammation of the skin. and in a few hours there is a preternatural discharge from the capillaries. This discharge being accumulated between the cuticle and cutis vera. is called blister A similar evacuation of fluid may be produced by other acrid substances such as sinapisms and many others But no experiments hitherto made have been attended with such success as to entitle them (sinapisms) to such general use as the canthardes. and they are seldom had recourse to. except when the flies cannot be obtained or where in consequence of the extreme torpor of the system they have been found ineffectual

The ancients were not entirely ignorant of the powerful effects of blisters although their application was confined to very few diseases. It is said that the Arabians were the first to use them with a view to rouse their patients from a lethargic state. The physicians that succeeded them for sometime used them indiscriminately in every state of morbid action in the system. From an ignorance of the proper period in which they were indicated (as it may be supposed they did great injury by too early an application of them. our knowledge of the efficacy of blisters may be attributed to a dispute which took place between some Italian physicians relative

the to their use in a plague which prev-
-ailed in the sixteenth century. Their
application cannot be considered as
yet regulated in all cases they are
even now often prematurely applied
and seldom without manifest injury
to the patient. In the application of
blisters we have a very convincing illustr-
-ation of the necessity of attending to the
state of the system before we prescribe
a remedy. This principle is inculcated
with much ardour by a learned and
ingenious professor of the University of
Maryland — upon this principle is
founded the art of alleviating and
curing diseases and as such should never
be forgotten by a practitioner of
medicine — Much has been said about

the manner in which blisters operate one party maintaining that an absorption of the canthandes takes place and that all their good effects are derived in this way— Another that they act by revulsion only. It appears that the former party were led to their opinion by observing that strangury is produced by the absorption of the acrid particles of the canthandes, This fact they conceive to be sufficient

That some part of the canthandes is sometimes taken into the system by means of the absorbents is very certainly proved by the phenomenon of strangury— The absorbed part appears to be particularly determined to the urinary organs sometimes producing by its irritating action inflammation on the neck of the

bladder and consequently pains dysury
Blisters are powerfully stimulant. we
may infer this from the increased force
and frequency of the pulse which is prod-
-uced by them. and from the great deter-
-mination of blood to the part which is
in contact with the flies. occasioning infl-
-ammation and effusion. When blisters are
applied to the extremities they give a centrip-
-ugal determination to the disease thereby
saving parts essential to life as in yellow
fever. The operation of blisters is both
stimulant and sedative. They answer the
purpose of metastasis better than any
other medicine in use. Dr. Rush tells
us that it is from ignorance or inatt-
-ention to the proper period or stage of
fevers in which blisters have been applied

that there have been so many disputes among physicians respecting their efficacy when applied in a state of great arterial action they do harm: when applied after that action has nearly ceased they do little or no good." The period in which blisters are useful is called by him the blistering point. Blisters are applicable in local and general diseases. We must keep in view the principle which I have before said is so strongly inculcated by a learned Professor.

In the malignant state of fever which appears in the plague yellow fever &c blisters may be applied to the extremities. after the morbid action has been in some measure

reduced by plentiful evacuations.
The determination which they produce
to the surface often prevents congestion
and inflammation in parts essential
to life. They have been used in the
plague with great advantage as the
irritation which they occasioned invited
the disease to parts not absolutely ne-
-cessary to the vital functions and
thereby prevented the too often fatal
consequences of congestion in the viscera
Dr. Rush in his treatise on yellow
fever says that blisters when applied
in the proper period of this disease
(yellow fever) did great service. This
time was when the fever was so much
weakened by evacuations that the

artificial pain which is produced by the stimulus of the blisters destroyed and like a conductor conveyed off the natural pain of the body

In typhus or the low state of fever. blisters may be applied as stimulants with considerable advantage. and to obtain this to the greatest extent they must be small and repeated, and never suffered to discharge long: as the evacuation would counteract the purpose for which they are intended. In the typhoid or slow nervous ~~state~~ fever Dr. Huxham used them (blisters) with advantage, and from their operation in other states of fever we can entertain no doubt of their application being attended

with efficacy in this.

The intermittent fever is sometimes so obstinate in consequence of marsh miasmata producing so great a degree of action in the system. that the bark has been found inefficacious and in many cases extremely injurious. when such cases occur. the patients pulse is found to be moderately tense. By premising blood letting. or the abstraction of the excitement from the blood vessels to the surface. by blisters to the wrists. the bark will always be found effectual—

Blisters are very important remedies in the treatment of the

different varieties of phlegmasical diseases.

In acute pulmonic affections especially blisters are recommended physicians disagree as to the proper time for employing them in pneumonia That blisters may be employed early in this disease is proved without doubt however they will be more beneficial after the reduction of the vehement arterial excitement,

In relation to this point Dr. Armstrong makes the following remarks:

"It has sometimes ~~occurred~~ struck me very forcibly" says he "That the precipitate application of blisters to the

chest before general or local blood letting is a prejudiced practise: at least I have seen hydrothorax rapidly follow it, from the increase of the general and topical excitement which blisters thus applied had apparently produced. This point is therefore worthy of further investigation in the acute pulmonary inflammations.+

In the treatment of hepatitis blisters are very useful; and in inflammation of the bowels and peritoneum they are indispensable. In all these affections the blisters should

+ Practical Illustrations on the Scarlet fever. P. 15-4

be large and applied immediately over the parts affected.

In all those affections of the throat known by the names of Cynanche Tonsilaris, parotidea, maligna, and trachealis blisters are very useful applied in the proper time.

In rheumatism I believe every practitioner can testify to the efficacy of blisters. Their good effects must be ascribed to their producing a new action on the skin which is more violent than the inflammation seated within: and probably the

evacuation which they occasion contributes in some measure to relieve the inflammation of the ligaments by lessening the quantity of the determined fluids to the part—

In gout by determining the inflammation to external parts blisters often prevent morbid congestion from taking place in the viscera—

In the maniacal state of fevers as in all other states of morbid action we must be directed by the action of the

blood repels as to the proper time for using them. for the application of them when the system is highly excited. or too enfeebled. would not be attended with advantage but on the contrary with very great injury.

In the apoplectic. phrenitic and lethargic states of fever. blisters may be applied to the head or neck with advantage we must consult the state of the system and bring it to the point proper for their application. by evacuation

In the paralytic state of fever blisters are often serviceable when applied to the limb or part affected

In the hydrocephalic state of fever they should be applied behind the ears or to the back of the neck. ~~If effusion has taken~~ If used before effusion ~~place~~ has taken place, they generally prevent it by producing a determination of the morbid action to the skin, and an evacuation which seldom fails to remove the phlogistic diathesis. but even when we have reason to suppose that effusion has taken

place in the brain. they should be used, as they produce a discharge which often relieves the brain from the pressure of the effused fluid,

Blisters applied to the thighs in the amenorrhagic state of fever produce an increased determination of the blood to the lower extremities and some effusion which seldom fails in lessening the activity of the pulse and restoring the natural evacuation

The hysterical and hypoch-

-onadical states are not unfre-
-quently accompanied with such
force of action in the blood vessels
as to constitute the proper time
for the application of blisters.
The wrists are the proper places
in such cases for them.
The artificial action they
produce abstracts the excitement
from the blood vessels and by
diverting the attention from the melan-
-choly subjects, the train of gloomy
associations is broken off.
In the waking or watching

state of fever. blisters may be applied to the coriotis. By abstracting the excitement from the blood vessels of the brain and fixing it in the skin and muscles. they often induce sleep

These are some

infantile diseases in which blisters may be used with success

The hooping cough in some instances may be called a very distressing disease. The morbid action is sometimes so virulent

as to require blood letting and blistering to a considerable extent

To obviate or remove the inflammatory determination to the lungs blisters should be applied to the thorax as being more efficacious than when applied to distant parts

This disease often continues a long time after the contagion has ceased to act and that from the power of habit alone

In this case they have a powerful influence in destroying the force of habit by the new disease which

they produce. Strangury produced by blistering has been attended with an immediate removal of cough in this disease.

In colera infantum blisters applied over the stomach, are very effectual in removing the sickness at the stomach and suppressing the diarrhea. Their efficacy is more certain combined with the fever of the air of the country. The fever which is sometimes produced by the irritation of the gums in dentition. is often cured by a blister

to the back of the neck, or one behind each ear. after evacuations have been made. The difficulty of getting blood from children and of exhibiting sufficient doses of medicines renders Epispastics. not unfrequently the only remedy to be depended on Blisters are sometimes very efficacious when applied locally. The application of a blister to the tract of an inflamed nerve is a practice of much value. This treatment was first ~~used~~ introduced by Dr. Physick. a small plaister of simple cerate spread on linen. is to be applied to the orifice. and over this a blister large enough to cover the whole inflamed part

extending three or four inches from the orifice in every direction.

In concluding this essay permit me gentlemen. to acknowledge the sentiments of gratitude I feel for the civil and polite attentions received from you individually and the information derived from you collectively as Professors of this institution. I fondly anticipate the day when this University will hold a rank distinguished in the records of medical history where the true principles and practice of the different departments of the science of physic are ably taught and the dogmas of ignorance and prejudice consigned to oblivion

An Inquiry Into The Nature, Cause, & Cure of Mental Derangement.

Submitted to examination before the Provost, and Professors of the University of Maryland, for the degree of Doctor of Medicine,

by

W. H. Grimes, of Maryland.

1828.

To Jno Reynolds, M.D.

Sir.

Under your direction I received the first rudiments of medicine, & to you I dedicate, ~~the~~ my first effort in the science.

I am induced to do this by two considerations - first, because it is the only way I have at present of acknowledging the many obligations I am under to you: second, because I believe, that you will view favorably any imperfections the attempt may labour under.

I remain

Sir

Yours very much

obliged

W. H. Grimes

Maryland Hospital
21st of March 1828

An Inquiry &c.

In selecting Mania as the subject of an inaugural thesis, my object was, not so much to advance a new doctrine, as to establish an old one.

It is not without a considerable degree of "fear & trembling," that I enter upon so difficult & so obstruse a subject; but as my object is truth, I shall persue it, at least, with firmness, if not correctness.

I define mania to be a disease of part, or of all the faculties of the mind. But before entering upon the inquiry, it may, perhaps, be proper to state what those faculties are; not that I intend to be so presumptive as to attempt to say what is the nature of the mind, but that I may endeavour to ascertain the seat of some of its diseases.

The faculties of the mind, according to some writers, are "understanding, memory, imagination, passions, principle of faith, will, the moral faculty, conscience, & sense of the Deity." Its operations sensation, perception, judgement, volution &c.

The mind is put into operation, by impressions made upon it, thro' the medium of the external senses, as the different colors make impressions on the organs of vision, odours on the organs of smell, different surfaces on the sense of feeling, sounds on the auditory nerve, sweets & acids on

e organs of taste; thus a communication is preserv-
d between man & the material world. When any of
ese organs are diseased, false impressions are convey-
d to the mind — the mind directs the will improperly,
we have incoherent actions: thus, a man imagines he
ees a spectre, & he flies to avoid it. A disease in
ny of the faculties is the first step to madness.

In conducting our inquiry we should be led, as well
this as every other disease, first, to ascertain, if possi-
le, the seat of the disease, second, its pathology, third
s causes, & fourth its removal or palliation.

Concerning the seat or proximate cause of men-
e derangement, there have existed a variety of opinions.
e ~~ancients~~ supposed that madness was derived from
orbid functions of the liver; & as this viscus is ve-
liable to disease, the opinion received considera-
ble countenance from its being very often found
a morbid condition, on dissection after death. sub-
quent writers refer it to the spleen; while more mod-
rn ones contend that it cannot be referred to either
e one or the other, & that it has its seat in the blood-
ssels of the brain, or in excessive arterial action,
oduced from the same causes, which produce fever.
Without stoping to inquire into these different opini-
ns, to ascertain their correctness, or to enter into a-
y metaphysical speculations concerning them; I
ill merely remark, that, if the disease could, with
opriety, be referred either to the liver, or spleen, or
oodvessles of the head, we might be led to expect from
e remedies successfully used in these diseases, more fre-

ent cures of madness, than we are in the habit of witnessing.

In rejecting all the theories which have been advanced this subject, we should only be actuated by the hope of producing something which approximates nearer to the truth; whether we shall succeed or not, rests with future investigators to determine— We shall at least make a step towards it: if we fail in our attempt, we may perhaps, kindle a spark, by which some more successful genius may fire his torch, & thus penetrate the gloom which envelops this intricate subject.

We conceive madness to be entirely a nervous disease.

To illustrate this position, we shall form the nervous system into three divisions: viz:— Those of sensation, in which we believe the disease to be exclusively situated, when these nerves are in a state of disease, & we can easily imagine an hundred causes, which may produce a derangement in their functions; those of motion, & those of sympathy.

That the disease is thus situated, we infer

I. From a total absence of some of the senses, & a perversion of the rest in every madman: Thus, one will tear his blanket & roll it up, then cry most piteously until the "Sea Serpent" is removed from his cell— Here is evidently a diseased nerve, transmitting false impressions to the brain. Another is insensible to taste & smell, & will swallow anything presented, even of the most disgusting char-

ter, without the least mania being produced. A
ind is insensible to the temperatures of heat & cold
so remarkable a degree, that he will burn his legs
to blisters," without evincing the least concern at it.
. Rush relates the case of a man in the Pennsylvania
ospital, who would stand in one position, in the cold,
ntil mortification was produced, without manifest-
ng the least pain, or disposition to move.

II. From sudden impressions made upon the nerves,
requently removing the disease; such as fear, terror
c. For examples of this nature, consult Rush on the
ind, Edinburgh on mental derangement, and every
her writer, who wrote on the subject.

III. From the disease disappearing on the accession of another
which had a tendency to obstruct morbid irritability
rom the diseased nerves: thus, the patient, who perceived
the sea serpent in his blanket, took the confluent
mall pox in the Pennsylvania hospital, & died; but pre-
ious to his death he became perfectly sensible, &
spoke as rational as any one.

And VI. From it's seldom appearing in persons, who have
ot attained the years of maturity. The manner of account-
ing for this, is, first external objects do not pro-
uce the same impressions in youth, that they do in
dult age; 2d impressions made in youth are of a
ransient nature, & soon forgotten, whereas in adult age,
he impression, that of a beatiful object is continued un-
il the nerve, on which it is made, becomes diseased, from

ong action: just as the continued impressions from odours, n the olfactories, produce hysteria & other diseases bordering on madness; or just as the whole system becomes debilitated from long continued exertion, & then inducing disease by keeping up the exertion.

Causes,

We come now to consider the most frequent causes of mental derangement. These are, hereditary predisposition;— this disposition exists in a latent state, & is transmitted from the parent in the same manner that gout is; but whether transmitted by bloodvessels, nerves, bones, or muscles, "is a mystery locked up in the strong box of nature," but that the disease is inherited by the offspring from the parents, is a fact, which, I believe, is not at all questioned now. Injuries of the head, so as to make pressure on the nerves of sensation, a constant habit of intoxication, onanism, extreem obsence fiction, superstitious dread, religeous fanaticism, all the passions, as, Excessive grief or disappointed love, A peculiarity in the formation of the cranium. out of all the maniacal patients now confined in the Maryland Hospital, more than two thirds of them have some peculiar formation of the skull. Some have remarkably small round heads, while others have long narrow heads; others again have their skulls narrow & small at the base and wide at the top, not unlike the heads of hydrocephalic children. Excessive use of Mercury, inordinate gratification of the venereal appitite, the sudden repulsion of

tanious eruptions, violent arterial action, such
is found in puerperal convulsions, & in fevors
hich attack gross & plethoric habits, insolation, worms in
alimentary canal, continued attention to any one subject,
excessive use of narcotic medicines— Many more might
enumerated, but these are sufficient to show the
ariety of causes, which produce mental derangement,
some one of its forms.

Madness may be divided into three forms, viz;
Furious madness, Melancholly, which is considered
hypochondriasis; & madness from an imbecility of
intellect, each of which will require a seperate consideration
this paper. In this, however we shall not attempt those
elicate distinctions which mark the bounderies between
xcentricity of character, & actual madness; but con-
ider certain deviations from propriety, as another
egree of the same disease.

Symtoms.

Furious madness makes its approach by some peculi-
r symtoms; such as restlessness & watchfulness, anxiety
bout imaginary things, incoherent expressions ex-
entricity of convocsation & conduct, considerable iri-
tability of temper, hostility to friends & relatives, sad-
ess &, languor. The skin is pale & cool, sometimes the face
s flushed, a singularly wild & vacant stare is visa-
le on the countenence; there is either a total want
f appitite, on there exists a morbidly increased one,
the bowels are obstinately costive, a considerable de-
ree of headach is frequently present. When nearly the
hole of these symtoms are present, we may form a tol-

derable correct prognosis of the character of the ap-
proaching disease. When these symptoms are complete-
ly formed, we have a wild, ferocious expression of the
countenance, an appearance of fulness in the face,
face, with red eyes & flushed cheeks, the patient be-
comes very boisterous & clamourous — he whistles
& sings incoherently, makes long & ridiculous speeches,
uses very obscene language, curses & swears most
horribly, looses all sense of shame & delicacy, rends
his cloaths, stalks about in a complete state of nu-
dity; and, finally, to finish the mellancholy pic-
ture, the patient degrades himself beneath the
brute creation, by acting the most disgusting
scenes imaginable.

In this stage of the disease,
the skin is cool, & not the least moisture can be
discovered on it; and what is very remarkable,
there is no secretion from the mucus membrane
of the nose. It is mentioned by Dr. Rush, &
to satisfy myself of the correctness of the observation,
I made an examination of all the patients who were
deranged in the Maryland Hospital, & found it to
be the case in every one, with one exception. The
pulse is sometimes hastened a little, but it is
more frequently natural — The frequency of the
pulse just alluded to, may be referred to nervous
irritation. In this state of madness, one or more
of the nerves of sensation are distroyed, and the oth-
ers become very acute; just what occurs, when a
man looses his sight, the sensation of feeling be-
comes very acute; hence, maniacs hear very acutely

though they taste nothing, and smell nothing.
Different causes, however, produce different symptoms—
thus the Saracens, a poor, destitute, & naked horde of
wings; unskilled in the use of arms, or the art of war,
and their imaginations inflamed with a new doctrine,
became partially deranged & thus fearlessly attacked fortified
towns & citadels; nor did they raise the seige until the
place capitulated. Here the continued idea of beau-
ful virgins & plenty of wine, by long action on the
ves of sensation, brought on a disease of the mind,
hich caused them to devastate the most beautiful,
fertile countries of Asia, Europe, & Africa. The same
auses produced the same effect in the wild and
isionary Crusaders, when they marched to the
ly land. The remidies to be used in this disease,
epend upon the cause that produced it. I shall,
herefore, say nothing of the treatment until we shall
ave discribed the different forms of disease.

The next form of mania is melancholly, or as some
uthors call it Hypochondriasis.

The elder physicians were often very unhappy
n their use of terms in medicine. Of this we
ave sufficient proof, if we but open their noso-
gical books. Technical words meet our eyes in
very direction, and if they do not confound us,
t least puzzle our wits, in ascertaining their
recise meaning, and original application.

Hypochondriasis is that term which was em-
loyed by the ancient nosologists, to denote an
neous state of mind, produced, as they conceived

a derangement in the functions of the liver, or some other viscus of the hypochondriac region, but it is, however, abundantly proven, that the disease is not derived from diseased liver, or any other of the viscera:— The term is therefore inconnect and not applyed with strict propriety.

As this form of mental derangement appears most evident in an erronious perception and judgement of things relating to the person & circumstances of the patient, Dr. Rush proposes to call it Thistanemia

Various epithets are applied to this disease in common conversation, the hypps, spleen, vapours, low spirits &c are all synonimous with hypochondriasis in it various grades. As the author of this essay has been more in the habit of turning his attention to the phenomina of diseases than their characteristic distinction, it will be sufficient to observe that Dr. Cullen has given the following character of it— dyspepsia, languor, want of energy, sadness, & fear from uncertain causes; with a melancholic temperament."

Persons of nervous & hepatic predispositions are most subject to melancholly.

Hysteria sometimes resembles melancholly, but there are certain prominent features, by which they may be distinguished from each other. The blood vessels are more effected in hysteria than in melancholly, the nervous system in the latter is always in a state of torpor, in the former great mobility prevails, hysteria ap-

ars in paroxisms attended with occasional delerium,
t is not so with the other — hysteria is alleviated by
ld, melancholly by warmth.

That it combines with
ysteria is proven by many facts. Some melancholic
atients are dull & sad at the same moment, at another,
they are gay & divacious to an extreem. They are a-
mong the most boisterous laughers, & are addicted to
eat merriment & mischief. These are convulsive effects,
nd can only be explained on the supposition that
ey are borrowed from hysteria.

Persons advanced in life are more subject to the dis-
ase then the young.

Causes

The remote causes operate, first on the body, se-
ond on the body through the medium of the mind,
& third on both at the same time.

Among the first,
re all debilitating occupations of a sendentary kind,
fatigue, irregular diet, hunger, watchings, un-
wholesome food, chronic fevers &c.

The second variety
omprehends all the excesses of the passions & emotions,
oy, grief, anger shame, disappointment, vexation, reli-
ous destress, intense study &c.

The third kind, or those
hich operate on the mind and body at the same time,
re all perplexing employments, where the mind is
ubly hurried, & the body fatigued, as professional
ractice, teaching school &c. the various forms of the
enerial disease by inducing debility, & at the same

ne exciting emotions of shame and sorrow in the mind,
ave made many a melancholly patient.

Symtoms.

These are very various. In-
igestion, flatulency, costiveness of the most obstin-
ate kind, which requires the most powerful incitants
to move the bowels; diarrhea, an excessive secretion
f bile, dry skin; & an increased flow of urine,
slimy stools; deficiency of appitate; preternatural
appitite, cholic, tumed abdomin, tinnitus auri-
um, throbings of the temples, indistinct vision,
alpitations of the heart, burning of the hands &
eet & c.

The mind is as variously effected as the body.
It is languid, & inactive, and can seldom be employ-
ed in thinking on any subject, but that of person-
l distress. The imagination is in search of dole-
ul images "with a wing that never tires." A thous-
and fancies are continually excited in the brain;
lmost every disease lends a share in forming the
ymtoms of this.

As consumption is the most fre-
uent & fatal disease, it is not to be wondered that
it should stand foremost among the chimeras of the
atients' brain. If a cough happens to trouble him,
he has an abscess in his lungs without doubt;
his fears immediately create an hectic fever, should
his hands & feet feel a little warmer than usual,
it is a certain indecation in his mind, that the
ravages of this direful malady are commencing.

Should the unfortunate patient have been lured by a strum
et, & attacked by the venereal: notwithstanding the poison
been completely eradicated from his system; he is
constant fear of having his palate, or the inside of his
se destroyed, by the inroads of the resuscitated distemper.
is imagination conjures up to his view the loss of repu-
tion & of friends; & predicts ruin & misery through
remaining part of his life:- Again, he believes
is heart is dilated into an aneurism, or has concre-
d a polypus, if peradventure through there debility
it palpitates or beats with a little irregularity.
Thus in turns he has a stone in his bladder; an
bscess in his liver; and a tapeworm in his belly.

His mind is effected by certain extraordin-
y fancies. He is firmly convinced at one crisis
at his body is transformed into a plant & needs the
holesome showers of heaven to make him grow; or,
erhaps, he may imagin himself a teapot: under
is belief, he is in an awful situation if he be
o roughly handled; and he shivers at the idea of
eing broken to peices. Probably he has conceived
himself with child; or to sum up the conclu-
ions of his fancies, he persuades himself that he is
xpiring, & with no more ado he suffers the pangs of
issolution & lies a lifeless corpse. Nothing, under
these circumstances will quicken him into life,
but some application like the actual cautery—
This powerful stimulant cannot fail to in-
flame his feelings to the most sensible belief
that he has yet to die.

se are not the worst of the patients mental sufferings.
He is sometimes in dispair, here we irresistably exclaim
las poor yorick!" This state of his mind is induced by a
ll persuasion that he cannot be saved in another world,
d that eternal misery is to be his fate hereafter.
his spiritual distress of the patient, is produced by
rong views of the character of the Deity, & of his own
ins. Every little neglect in his religeous exercises
- former life, recoils upon his mind, with apprehen-
ions that they were the most fatal remissions of duty, &
e looks forward with all the horror imaginable, to
e time when he will be cast into endless torment.
But it were an endless task to rehearse the almost
numerable symptoms attending this malady. Believing
at enough has been given to enable the discerning to
orm a correct prognosis, we shall now proceed to
he consideration of the last form of mania.

Imbecility of Intellect.

This is either congenital
- adventitious. The first is the effect of some pre-
disposition inherited from the parents; or some mal-
formation of the brain. The second arises from
long continued disease in the system, from sudden
impressions made upon the mind, from grief, & joy,
& several other causes, which it is unnecessary to men-
tion.

Symptoms.

These are generally known, as there
is scarcely a town that has not one or two in it.
They are said to be "foolish," that they are "cracked"

that they are "hair brained" &c. The patient has an unmeaning countenance; he laughs at every thing & continually; he makes use of trifling expressions, & is fond of the society of children, he is irritable in his disposition, careless about his dress, or extremely neat. patients with this form of madness, are remarkable for their loquacity, they generally talk when in company, & always mutter when alone; they are amused with trifles, exceedingly fond of sweetmeats &c. hence old people are so fond of their grandchildren, that they frequently spend all their time with them.

These symtoms are sufficient to enable us to form a prognosis of the nature of the disease, as it is by no means difficult one to ascertain.

Treatment.

We shall hasten on to consider the remidies which are necessary in each form of the disease— These are "moral & Medical."

When Mania is the consequence of hereditary predisposition, medicines are seldom if ever of use:— Our treatment must consist in rendering the situation of the unfortunate patient as comfortable as possible— This may be done in a variety of ways; by kind & gentle treatment from the attendants:— no excuse can be received in palliation of an offence committed against one of those miserable beings— by keeping the apartments in which they are confined, well cleansed & ventilated, by using Dr. Rush's tranquilizer; thus preventing the patient from rending his cloaths, & injuring himself— in short, to treat them just as we would wish ourselves to be treated if we were in the same melancholly situation.

When it is produced by any other cause, such as injuries of the head; here the patient comes under the cognizance of surgery & may be relieved by an operation— when from intoxication, we must abstract the stimulous slowly & administer emetics & cathartics, anodynes of some narcotic, opium, perhaps is the best; from inflation, the antiphlogistic treatment must be resorted to, cold applications to the head; the strictest regard must be had to his diet, he should be kept in a room where he would not be exposed to too much light; his bowels should be kept solu[illegible], with neutral salts &c. When from onanism the patient must be confined in such a manner, as will prevent his continuing so shameful a practice, when from excessive venery, he must in the same manner be prevented from indulging his sensual appitite— The man of feeling, may, thus very frequently alleviate the symtoms if he can not remove them. Labour has been recommended by some writers; but in that form of mania, to which the above treatment is applicable, it can seldom be resorted to, as the patient is in such a state, that he cannot be managed when at liberty.

The above treatment is applicable in that form of the disease, which has been called furious madness.

We shall now go on to consider the treatment in the second form of the disease, or that which we have called melancholly.

The remidies for this, form themselves into two kinds: viz. those that act through the medium of the alimentary canal, & those that produce

their peculiar effects on the organs of sensation—

When the disease is attended with symtoms of indigestion, costiveness, flatulency diarrhea &c as already enumerated, medicines which relieve those symptoms must be given— Indigestion must be obviated by a strict attention to diet, costiveness must be prevented by laxative medicines, & diarrhea by converting the morbid secretions of the intestines. An excessive secretion of bile should be prevented by alterative medicines, such, as small doses of calomel, the blue pill, or the nitro-muriatic bath, exercise of various kinds may be resorted to, such as riding on horseback, or in a carriage, swinging & sailing; moderate exercise on foot has been recommended. Thus, the judicious practitioner by a proper regard to symtoms, will generally assume success.

With respect to the remidies which act on the organs of sensation; these are such as may occur to the practitioner at the time. The disease occurs, as has already been stated under a variety of forms, & our treatment must be regulated accordingly:- Thus, if the patient imagin himself some great man, we must favour the belief, & treat him, with all the care & attention, as if his disease was a real one; & observe all the respect, in his presence, which such characters are in the habit of receiving, until an opperteunity may present itself to dispell his visionary greatness. If he imagin himself transformed into an animal, as is very frequently the case; such as a dog or a cat, or even a hog, he may have his food thrown to him in the same manner as we would feed those animals; every day by this cre-

An
Inaugural Dissertation
on the
Yellow Fever.
Submitted to the Examination
of the
Provost, Medical Professors, and Trustees,
of the
University of Maryland,
for the
Degree of Doctor of Medicine,
on the seventh day of April A.D. 1838.
by
James R. Ward,
of Maryland.

To

Nathaniel Potter. M. D.

Professor of the Theory & Practice of Medicine

in the

University of Maryland.

This Dissertation is humbly inscribed, as a tribute of respect for the great kindness and attention received from him; and which, will always be remembered with gratitude by

his much indebted,

and affectionate Pupil.

The Author.

From the prevalence of this disease in the United States, & from the mortality which has attended its appearance on our sea port towns, the attention of Medical men was generally attracted. The most distinguished of the age, in the profession of medicine made every exertion to discover the cause, the seat, & the best plan of treatment.

Great credit is due to professor Rush for the first correct theory of the Yellow fever. Its pathology was soon determined from Post mortem examination, accurate observation, & experience. No disease perhaps has had more talent engaged in its examination than the present one; & none perhaps has caused so much litigation; and still one or two points are sub judice. I refer particularly to the doctrine of contagion. The physicians of the North, firmly believe it to be contagious; & some deny that it ever originated in this country, but that it is always imported.

In writing an inaugural dissertation on this subject I am fully aware of the ability, with which it has already been handled by men who will be a lasting honor to the profession, & whose usefulness will not cease with their existence. This renders me more diffident in writing on this subject, however, having seen the disease in in a climate that is not generally known & whose diseases have not been described. I thought perhaps that some remarks might be made, which would throw some light on this important & very interesting subject. If this feeble attempt should be useful in any way to the science of Medicine, my exertions will be amply rewarded

2

Authors in discribing this disease have given it various names. The Yellow fever of the West Indies is the most common for this disease, but as yellowness is one of its symtoms & which can generally be prevented by proper treatment, it certainly cannot be properly used. Dr Rush calls it the Bilious remitting Yellow fever, which is certainly a more appropriate name, & one expressive in some measure of the nature of the disease. It has also been called the plague, however I have adopted the common term.

We have says professor Rush, this fever, like the steady blowing of the equinoctial gales, we have it again assuming a milder remittent type, sometimes imitating the character of common intermittent fever, but rapidly paving its insidious way to the distruction of the patient. From its ever varying type, for says Professor Potter, we find no two epidemic requiring the same treatment & wearing the same livery. It will be admitted that the disease as called by Dr Rush is the most appropriate it has yet received. If another should be given, any word that would define accurately the appearance & expression of the eye, would be the most appropriate. Language however it will be found inadequate to describe it, yet once seen, it will never be forgotten.

Causes.

This is another point which is not settled. many Physicians of the present belive the disease is always imported, & hence the strictness observed, in some of our sea ports as, regards the Quarentine Laws, which are a disgrace to all concerned in their enactment, for they carry on their very face, the strongest marks of folly & ignorance. There are so many facts that prove beyond controversy, that the disease

has originated in places that have had no connection with foreigners, or vessels from places where the disease prevailed. Marsh Effluvia is generally admitted, among those who have seen the disease frequently, to be the cause, not only of the Yellow fever but also of the common bilious & intermitting fevers of our country; as a necessary consequence they would be deemed by those who believe it is a foreign disease. Let us examine into the facts which present themselves to those who reside in that part of the country where these fevers are prevalent. On the Eastern Shore of Maryland, where the bilious and intermittent fevers are common every year. Foreigners who visit these countries during the summer & early in the fall are seized with the bilious & yellow fever, & die with the black vomit, which those who are opposed to this doctrine consider as placing the character of the disease beyond doubt, whilst those who have been raised & continue to reside there, will enjoy good health, or have the ague & fever, which they do not regard. Here the same cause is acting on both at the same time, & producing diseases, of the same kind only more violent in degree. Stronger evidence could not be asked, than the diseases of the American Colony of Slacky at Cape Messurado on the Coast of Africa. These people when they first settled on that coast, died in great numbers with the Yellow fever, so great was the mortality, that it was thought it would be necessary to abandon the settlement, they have however become acclimated, & now enjoy good health & what are the diseases to which they are now most subject? Common, mild intermittents; when this fever is prevalent, what do we find among foreigners, who visit that place? a violent & fatal fever, which destroys them in two or three days. With the black vomit the last struggle comes on, & death soon closes the scene. Let one of these blacks return to the United States for a winter

and then return again to Africa & he will have the Yellow fever. This has been repeatedly observed in the inhabitants of the West Indies. for, if after residing immediately on the shore, or in the large towns, they go into the interior of the islands and remain for some time, upon coming down on the coast, they will be seized with the Yellow fever.

This is proof sufficient to convince the unprejudiced mind, that the Yellow fever & Bilious fever have a common cause & that they differ only in degree. To account for this difference certainly cannot be difficult. The habitual Laudanum taker will, with impunity receive at one draught, a dose sufficient to destroy two persons who are unaccustomed to its use, without any inconvenience to himself; in the same way the Constitution becomes accustomed to the action of this poison, so much so, that it may not produce any disease, but the atmosphere that one man breathes with impunity, who has been habituated to it, will, soon produce violent disease & death in him who had never been accustomed to its action.

The Yellow fever as described by Professors Rush & Potter, as it occured in the United States, at or soon after they wrote, bore the same general character as that I was witness to, in the West Indies & required the same active treatment. I had an opportunity of seeing that state of the skin, which is produced by Mercury & which Dr Good calls a "diaphnoe", This was the first evidence I had of the Mercury affecting the system. From Dr Goods accurate discription of this state of the skin, I remarked as soon as I felt the patient that the mercury had had the desired effect, which was manifested in a few hours from the patients complaining of his mouth. It is not requisite that I should describe the yellow fever of this country which has been so ably done, by men whose celebrity will be the proud incentives to our

tion in the youthful candidate for Medical distinction. These remarks I thought necessary to make before attempting to describe the disease as it occured on board the United State Schooner Shark during a cruise of six weeks on the coast of Africa. The Shark sailed from the U. S. in November & arrived at the American Colony at Cape Mesurado in February. some few of the Colonists were labouring under chills & fever, generally they were healthy, our crew was remarkably so when we arrived & continued so for some times, as we generally were at sea every day or two & the men were not much exposed. Before describing this disease, as it occured on board the Shark. I think it necessary in order to elucidate the subject as much as possible to make a few remarks on the country & climate. these cannot be as accurate as I could wish, but shall be as perfect as my limited observation extended. The Country is thickly covered with low wood, and large timber. The soil is very rich, none perhaps more so: none, where vegetation is more rapid, & luxuriant. The seasons are divided into wet & dry. During the wet season the rain falls in torrents & almost deluges the face of the country after a heavy shower the air is close, & together with the perpendicular rays of the sun renders it almost insupportable. When the dry season comes on vegetation thrives astonishingly it soon grows rank, fall, & putrefaction take place; Large collections of stagnant water filled with vegitable matter in a state of putrefaction, are to be found along the banks of the river. We have the diseases arising from Marsh Effluvia prevailing during the year as putrefaction is continually going on. Yet they are more violent at one time of the year than at another. Our stay was during the dry season. In the morning until the sea

breeze sets in the air is warm & oppressive; about 9 o'clock we have the sea breeze which is refreshing & invigorating. In the afternoon we have the land breeze which produces a change in the temperature of the air, that is truly surprising. It becomes cold, chilly & damp & warm clothing is necessary. Many degrees difference will be found in the Thermometer during the twenty four hours. In the afternoon the mist is always so great that the sun becomes obscured about 4 o'clock.

It may easily be conceived that the air coming over such a country, would be loaded with moisture & the poisonous effluvia which is continually evolved from these wide extended marshes.

What Constitution could stand with these changes occurring every day. Cold, the great enemy of our race, here acts with certainty, predisposing the body to receive the disease, the cause of which disease is continually acting & surrounding him. his anxiety & dread which a knowledge of the unhealthiness of the climate increases, also renders him, a more easy & certain victim to his insidious foe.

All those who were taken with this fever complained of violent pain in the head & back, great uneasiness in the Epigastric region, & more or less irritability of the Stomach. all had the red, muddy & glassy eye. From the want of the written account of the most violent case that occured, I am unable to be as accurate as I could wish. The patient was a stout man & of good constitution, he was seized with a violent chill, soon after rising in the morning, succeeded by a high fever, pain in the head and back great irritability of the Stomach & great uneasiness at the epigastric region—

The state of the pulse, I do not correctly remember, but to the best of my recollection, it was depressed. he was bled freely that night & took Calomel during the day, no evacuation from the bowels took place, & an injection was administered. the next day the patient was able to walk on the deck, & complained but little. every thing looked favourable, except the eye which still continued to have the same unnatural appearance as at first. On the third day in the morning, he was again seized with a chill, followed by fever, in the afternoon he had another chill. On every other day he was better, the patient not appearing to be much debilitated for the first 2 or 3 days. the active treatment was continued, as the evacuations showed that the liver was deeply involved; for notwithstanding the continual vomiting no bile was thrown up from the Stomach. On the fifth day the debility became very apparent & his countenance indicated much distress. it was now found necessary to change the treatment. Tonics & Stimulants were ordered. On the morning of the sixth he was evidently sinking, about 4 in the afternoon he was seized with convulsions, followed by the black vomit & delirium. the patient on being asked how he felt answered, horribly! at 8 he was again seized with convulsions & expired with the black vomit running out of his mouth. Yellowness here did not take place to any degree until after death, when the whole surface became yellow. this was the first case that occured & the only one that terminated fatally. To another who was seized with same symtoms a large dose of Calomel was administered, & the patient was sponged

with vinegar and water, during the continuance of the fever to great advantage. Tonics were given as soon as possible & the patient soon convalesced.

The sponging has been much recommended, & it certainly has been found highly useful. It is hazardous, in fact impossible to pursue the same active treatment as in the diseases of this Country & the West Indies, as experience warrants me in asserting. On our passage to the United States from Havana several of our men were seized with the Yellow fever, the symptoms were not so strongly characterstic of yellow fever, as those on the coast of Africa. but yet required several bleedings & active cathartics, & the fever was not removed until some mercurial impression had been made on the system. This fact shows the difference between the diseases of the two countries. One of the Colonists who has paid attention to the disease, after considerable observation remarked, that he found that foreigners would not bear an active treatment more than a day or two & then required to be supported. The most successful treatment of the disease was, to use strong Mercurial cathartics in the first instance venesection being cautiously used, together with sponging & diaphoretics. They have an article indigenous to the country which is found to be highly useful as a diaphoretic & also a decoction of the leaves of the orange & lime tree is also useful.

The early use of tonics is absolutely necessary as they otherwise soon sink. Under this plan of treatment the disease is found manageable and a voyage to sea soon restores your Patient.

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Connected with this subject there are two circumstances of some importance, the one is that remaining on shore all night is almost always attended with sickness. Out of 4 who remained on shore all night, 3 were sick and one died.

A physician who resided there for some time informed me, that after he got well enough to go on board ships to sleep if he left the shore before sun set, he escaped his chill but he invariably had it if he remained for any time after that period. Johnson on the diseases of tropical climates has also mentioned a fact of this kind. The other is, that constipation for two or three days is followed by high fever & is often fatal to the foreigner, whereas those who reside there feil no inconvenience whatever, this say some is easily explained, the liver is in a state of congestion & the intestines have not been accustomed stimulants from there being no bile secreted. If this be the cause, ought a cathartic, which only evacuates the contents of the alimentary canal relieve the liver and restore the secretion. I am of opinion that it may as a congestion might be produced in the liver which has already been debilitated by the action of heat & consequently and consequently more sensible to the effects of Marsh Effluvia, by the operation of an active cathartic. What is the effect of a warm climate on this viscus? it stimulates the organ to action & we find the quantity of bile increased: the long continued application of stimulants to any organ will debilitate it, heat as the writers on warm climates, has a stimulant effect upon the liver. It consequently produces debility of the organ, & it becomes more liable to disease, Marsh Miasma acts on it with power & the result is disease. The faeculent contents of the alimentary

I believe him, and if there wanna other thing to shew that the Origine of Bilious fever was the same ~~as~~ that the ~~same~~ materials were the same (only varying in Concentration)

Canal, I should suppose must have some effect on ... fevers of this kind. The Physicians of the West Indies endeavor to restore the secretion of the liver by the use of Calomel in large doses, but they also pay great attention to the removal of the faeces & keep the bowels soluble. My attention was called to this subject from a case of Typhus fever, under the care of Professor Rush & mentioned by Professor Potter in his lectures. This patient had been stimulated for some time, Dr Rush raised him to a certain degree by tonics &c, but he became stationary, notwithstanding the most powerful tonics were used, a diarrhoea seized him & his convalescence was rapid & the use of tonics was no longer necessary; after having heard of this case. I saw a patient who had a low muttering delirium, stupor & difficult to be roused & scarcely answering the questions that were put to him.

Yet all these symtoms were removed by the free action of a cathartic which had been given whilst the patient was labouring under these symtoms and the pulse which was before weak & small became fuller & softer & the patient fell tranquilly to sleep.

I think if more attention were paid to the bowels in these fevers, our attention would be rewarded by the speedier convalescence of our patients. Yet it not be understood, that I approve of purgeing in all stages of fever. If I did, patients in certain stages of fever, would soon be hurled into Eternity. From the sympathy that is observed to exist, between the bowels & various other organs in different diseases. I am induced to believe, that a soluble state of the bowels would be more advantageous than is generally supposed, & that we are often deterred from this practice

time immemorial, holding it to be a fact Mathematically true where ever the Cause grows, there also may be seen the effect. — and the assertion of Dr. Warren that the disease was imported into Martinico in one of his Majestys ships from Palestine ~~is all~~ in 1721/2 is all a farce, we say that in those islands were found all the materials requisite to the formation of this disease that there the Thermometer ranged above °: there also could be seen animal & vegetable putrefaction with the requisite proportion of moisture. — & there to was an exposed race of men and so when we turned our eyes from the Cause we behold the effect; the accounts given by writers of the day and the accounts registered from the the words of the Aborigines themselves, who tho having no Idea of this disease and nothing to guide them but the wild and uncultivated eye declare that when one would die of these great rehruffs he would exhibit that colour so peculiar to the yellow fever alone — Dr. Mosely says the yellow fever is the disease, or a species of the disease noticed by hippocrates and the head Kausos — Also noticed by Areatius & Galen by the term Febris Ardens or Causus. the influence of Climate & season on diseases are too obvious on the Character of diseases to be denied. and a learned author tells us this disease is widely different as it appears in the West India Islands from that which appears in the mild and temperate Climates of Europe. and tells us in the, mild & pleasant Countries of Europe they have 10 the Bilious Remittent fever in a very gentle form — I believe

from our too great fear of debility. The prophylaxis is the same on the coast of Africa, as advised by Dr Potter & others as regards the disease in the United States. The bowels to be kept soluble, diet moderate, abstaining from ardent spirits unless accustomed to their use, carefully guarding against exposure in the sun, & to the night-air; keeping the feet & body dry, never remaining on shore after sunset, & by no means all night, a careful attention to these directions, will prevent the disease or render it light. As to the question of its contagious character I am decidedly an anti contagionist. Were these diseases contagious, we should have had none left to tell the dismal story of our miserable end, as ten persons in one case slept in one apartment with a man who died of the disease, & the marine guard who were the only sufferers in the West Indies, from being exposed at night on post, were confined during the whole of their sickness, on the same small deck where 20 or 30 sailors slept every night, & they slept almost in contact with each other, & yet not one had the disease. for my own part I visited these men frequently, & never had the least fear on account of its being contagious.

These remarks have been made with diffidence. To be an author so young, was far from my wish. Yet necessity hath compelled me to the task. The inaccuracies of youth must be looked over, when improvement may be expected from the stimulus to exertion that is given to the youthful enquiring mind, from reading the writings of a Rush & many others, who have done honor to their age & country, & last, though not the

to Marseilles, and thence to Martinique about the year 1721 or 2 — Mr Hughes tells us that Dr Gamble remembers in the year of 1691 that a fever prevailed in Barbadoes called pestilential fever new distemper and Billious fever and it was most fatal in May Jun July & August — Martinico appears to have been the place which this disease first made its appearance It would be impossible for us to say when or where this disease first made its appearance, we find from accounts of very early dates both from Europe and amongst the Aborigines of this Country there prevailed at times fatal epidemics in whose Countenance we be held ~~ma~~ some of the features of this disease sweeping away those unfortunate souls exposed to its power, but though we have not had sufficient documents from the dark and Obscure ages of antiquity to say positively that it was this disease which destroyed the inhabitants of the west India islands in 1723 & 22 and in many other places yet it is possible ~~where where ever, the requisite and~~ ~~in what ever~~ it might have been for aught we can say knowing all the materials requisite for ~~this disease~~ formation of this disease were present in those Islands and many other places and from our present knowlege the Etiology or the Causes of the disease, we believe it has existed

least the deserved celebrity of the professors of the University of Maryland which has been & will continue to be the proud Alma Mater of many worthies of our country & profession —

Finis.

tis not.
When this disease first sprung up in the western [illegible]
it was considered of the same species as the [illegible] ~~it was described~~ (has been described by some authors)
plague, and in fact only one disease varying in degree it
called by them the plague a disease — some time after
this it was noticed under the head of Yellow fever
or Black Vomit derived its Origine from two of the
most prominent ~~Origine~~ symptoms in the disease
— The Ancient Authors speak of a black and
Bilious Vometing long before this but not as a symptom of much
importance but no where as we have yet per-
ceived noticed of the great diagnostic the yel-
low Colour D^r. Hodges mentions One lone case
in the plague where a man turned green — and
from numerous Circumstances we are Compelled
Comparatively speaking to call yellow fever a
disease of (modern Origine) Treasure this point ‡ Says D^r.
Hellary as we have no account of this disease
from the Ancients who lived and practiced in
hot climates we must give it some Name
and he gave it a name a much more suit-
able one than any Author in his time the
Bilious ~~[illegible]~~ fever — and says from the
best from the best of his knowledge it is a
disease indigenous to hot Countries particularly
by the West islands & the Continent of America
— D^r. ~~[illegible]~~ Warren thought that this
disease was Originally brought from [illegible]

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On Phthisis Pulmonalis

An

Inaugural Dissertation

submitted to an Examination

of the Faculty

of the University of Maryland.

for the degree of Doctor

of Medicine

by

Horatio G. Grieves.

—1828—

To

Doctor Frederick Dorsey

of Hagers. town,

those sheets

are most respectfully inscribed

by his friend, and pupil,

H. G. Grieves.

To

John M. Lawrence M.D.

of Cumberland

Knowing of no individual who unites in his ~~talent~~ character more talent and benevolence than yourself, permit me to inscribe to you, this "stumbling block" in Medicine, as a token of the sincere respect and estum entertained for you by the

Author

To

John M. Howland M.D.

of Baltimore

There is no individual, within the circle of my acquaintance, to whom I could with so much pleasure, or so much propriety, dedicate the contents of the following sheets, as to yourself. For that disinterested solicitude, manifested toward me whilst pursuing my Medical studies under your able instruction; accept the gratitude you so justly deserve. That the propitious smiles of heaven, to which you so zealously aspire, may ever be yours is the sincere desire of

Your friend, and pupil,

H. G. Grieves.

Dissertation upon Phthisis Pulmonalis.

——————— Study well the clime?
Mould to its manners our congenial frames,
And mitigate those ills, we cannot shun.

The disease upon which it becomes us to treat has been emphatically as well as justly ranked among the "asprobria medicorum"; and as an incontrovertable evedience of this fact our bills of mortality are a lamentable testamony: to use the words of an immortal sage whose time and talent were studeously, zealously, and indefatagably directed to the advancement of his profession in a degree almost bordering upon enthusiasm — "Phthisis Pulmonalis as it is justly denominated is of all diseases one of the most fatal." When we take a circumspective view over the extended field of nature and as idle spectators animadvert upon our insignificance and imbecility; what description of

subjects do we find fall victims to its deadly influence?
Alas alas! But amongst them stand conspicuous those who
have arrived at the most engaging period of life and
those perhaps the fairest of our race. Must talent
then be spent in vain? Must researches then be
spent in vain? That same enterprize which snached
lightning from the clouds. That same philosophy,
and erudition, which has thus high elevated a sci-
entific profession; it yet remains for to discover a
specific for what we conceive to be the great-
est enemy to the human race.

Phthisis Pulmonalis is understood to be that a affec-
tion in which a general wasting or consumption
of the body arises from a diseased of the lungs.
Notwithstanding the want of information upon
this disease, which has been manifested by some
of the most enlightened of the Profession much

diversity of opinion as regards its Pathology has been advanced. Whilst by some it has been doubted whether the disease strictly speaking can be considered Idiopathic. By others it is considered to be invariably symptomatic of other diseases. Pneumonia - Catarrh - Scrofula - Haemoptesis - and several other genera have been mentioned as being the exciting causes of Phthisis; but this with the rest of the Pathology must yet remain a desideratum. The theory however of the Disease being one "sui generis" appears in itself reasonable and we find it substantiated from the circumstances of the disease making its appearance and approaches in such an insidious and formidable manner as frequently to be beyond the reach of human skill before its deadly effects shall have been promulgated.

It has been remarked that a peculiar description of subjects are more susceptible

of this disease than others and those have been described as being of a scrofulous diathesis. Whether any real advantage is to be derived from this kind of distinction or not it yet remains to be discovered.

Phthisis Pulmonalis has as an attendant in every instance that modification of fever termed "Hectic" this great and prominent characteristic has been described as making its appearance sometime before a fatal termination takes place – much controversy of opinion has been entertained as regards this of all most distressing symptoms it therefore becomes us to remain silent untill further and more satisfactory investigation be reported.

Writers when describing disease have thought proper to adopt by way of perspicuity certain classifications, and in order that our present object may be facilitated we for similar causes will adopt a plan approved; although disapproved

of by some upon whom the meed of praise has not been lavished undeservedly. The causes and symptoms of Phthisis have ben modefied and magnified to so great an extent by nearly every one who has attempted the subject; that it is less a source of astonishment than of mortefied feeling, why so much yet remains undiscovered. We will now proceed to a description by observing an arrangement which to us appears plausable as well systematic.

Those species have been denominated the Catarrhal, the Apostematous, and the Tuberculous, In every modification of Phthisis, the symptoms have been referred to three heads — the Pneumonic or Pulmonary symptoms the symptoms of Hectic Fever & the supervening or what has been termed consequent symptoms. We will briefly commence by describing the Pneumonic symptoms as occurring Catarrhal Phthisis

Cold is looked upto as being the great fountain and throne of all Catarrhal diseases; this modification of Phthisis makes its approach with that same undeviating train of symptoms which characterize this class of disease. After the more violent Pneumonic symptoms shall have subsided, others of a more distressing character are said to develope themselves, and first "Tussis" which may be described as being one of the most prominent features of incipient Phthisis this peculiar disagreable and troublesome cough we find much aggravated when in the recumbent posture, at the same time we do not find it wanting for disagreable sensation while in any other position. After this the chieftan of the van shall have proceeded with an almost irreparable devastation, others, of an equally alarming character follow up the afflicting scene.

Dysphonea - sense of soreness in the Thoracic region -

and with these attend an expectoration which by this time assumes a yellow aspect, disagreeable both in taste, and smell: occasionally instances we find mingled with the matter expectorated streaks of blood said by discerning men to be an indication of a scrofulous diathesis. Upon this latter clause it remains not for the inexperienced to animadvert, suffice it to say that the medical opinions of medical men should always be open to impartial investigation as well as rigid scrutiny and if erroneous or inconsistant with Medical Philosophy, talent, and experience, and aspiring ambition, it becomes to controvert. We regret that it is not in our power to dwell more extensively upon this as we conceive to be important point; the confined limits of an Inaugural Dissertation, together with the reflection of its perchance prove uninteresting to the gentleman into whose hands those sheets are consideration abundantly obvious

to justify us in abandoning our contemplated arrangement.

Another variety has been described as being the Pneumonic Symptoms occurring in Apostematous Phthisis. This variety has been described also as being much less frequent than former, its symptoms more prominently characterized and its result a more fruitful source of lamentable contemplation. Apostematous Phthisis is a consequence upon a large abscess formed within the cavity of the thorax; the former has been described as being ushered in with cough, and other catarrhal symptoms and as being a consequence upon atmospheric vicissitudes: whilst the Apostematous or the stage we are about to describe would be by those who advocate the theory of the disease being a con-

sequence upon certain other diseases and by those who mingle causes with effects attributed in all probability to an Pneumonia, to an Hæmothorax, or to some other Inflamitory Thoracic disease; we do not conceive that any important advantage can result from this kind of distinction, but we do conceive it to be of vital importance to know whether certain diseases as they are described to be are exciting causes of Phthisis Pulmonalis or what plausability would make them appear to be merely precursory symptoms. Upon this point much of a speculating nature has been invested in, which has not only had a tendancy to render ~~intricate~~ what might otherwise have been considered simple but to render still more complicated a complicated subject.

Authors accounting for abscess forming in the chest af-

signs as its most frequent cause an haemorrhage taking place from the Lungs. Dr Cullen has dwelt upon this subject with so much pertinacity, that he has ventured to rank it under the genus of Haemorrhagia, and as is generally presumed erroniously viewed it as a sequelae of that affection: that this variety of Phthesis Pulmonalis does often commence with a spitting of blood no one pretends to deny; but it would be equally rational and equally justifiable to place Intermittent under the genus Cholera, because it has as a frequent precursory symptom Nausea and Vomiting. Vomica may then be considered as a consequence of Haemoptesis or spitting of blood from Pulmonary Predisposition. Blood though emanating from the lungs is not to be considered as the only source

of this variety of disease, Inflamation of the Lungs as well as external thoracic Injuries deserve a conspicuous part in this of all most afflicting tragedies. Pain, Dyspnoea, and other Phthisical Symptoms attendant upon the incipient stage of Apostema are said to be comparatively speaking inconsiderable, in this state of things severe fits of coughing will frequently supervene attended with but little expectoration; and in this point consists the great diagnosis between catarrhal and apostematous Phthisis. We had intended dwelling more at length upon this variety of the disease, but when we find Philosophical sages here drop their pen, surely it must be an indication of their having reached a "Ne plus ultra" point.

a point not to be transcended by the inexperienced however enthusiastic. We come now to a description of the most frequent as well as most dangerous of all the species of Phthisis.

The Pneumonic symptoms attendant upon the Tuberculous Phthisis approach in many respects the variety last described it would therefore be superfluous to recapitulate what has already been said. Tuberculous Phthisis in consequence of its arising from the greatest variety of exciting causes, is of course of most frequent occurrance. But however numerous and varied those exciting may be all of them operate as giving rise to this variety or modification of Phthisis, or one general principal

ely. as inducing those peculiar tumours termed tubercles which have been found in the lungs of patients who have died in this stages of Phthisis: the symptoms attendant upon this variety of the disease are comparatively speaking inconsiderable, in the incipient stage cough and other Pneumonic symptoms are by no means urgent, and in most cases no remarkable pain of breast attends, and when it does it is neither fixed or constant; and contrary to what happens in Apostematous Phthisis the patient can lie with equal facility on either side. Most frequently the matter expectorated in this stage of the disease is a thin watery fluid slightly tinged with

blood, it has been described as having very much that appearance of sanies which is often discharged from scrofulous sores. When this state of expectoration takes place "Hectic fever" is seldom wanting to a considerable degree.

Much controversy of opinion as regards the pathology of "Hectic" has been entertained by some of the most enlightened of the profession. After viewing strictly the different theories advanced upon this subject we are inclined to consider that which arises from a certain irritable state of the system induced by an absorption of pus to be the most probable as well as plausable conjecture.

"The Hectic Fever" is very generally not of the continued form - but consisting of remissions and exacerbations; and from this circumstance it has been justly described as being a variety of Intermittent. All that is necessary to mention in this state of things is the description of Pulse attendant upon Hectic fever, which in most instances is seldom observed to be under 100 and frequently above 120 strokes in the minute. In some instances of Hectic the pulse is full and hard; but more frequently small and hard during the paroxism as well as intermission. After this distressing symptom shall have been observed for some time; others

of an equally alarming character make their appearance, those have been termed the supervening and then again they have been considered as sequelae of "Hectic." It is doubtful in our minds whether they can be considered strictly speaking either; they may be perhaps like hectic symptomatic of the progress of the disease from an absorption of ill-conditioned matter from the Lungs, the probability is though that if not induced they are at least much aggravated by the hectic fever.

A picture in itself deplorable 'Tis now we approach with a feeling no less painfull than a consciousness of our inadequacy to depict.

Human misery is in no instance more strikingly exemplified than in the one which now presents itself to our consideration, and the one which now it is our province to describe. After all the foregoing distressing symptoms shall have made their appearance upon the stage of humanity, characters equally conspicuous terminate the tragical scene. Emaciation or wasting, has been justly numbered amongst the prominent Pathognomonies, of confirmed Phthisis Pulmonalis, and in no part of the system is this symptom more obvious than in the face, here, it has been termed the "Facies Hippocratis" in short the whole system becomes so completely reduced that it has been represented

to be as it were a living skeleton. With emaciation attends aphthous spots both upon the tongue and mouth; which in the end not unfrequently degenerate into ill conditioned ulcers. These aphthae & consequent ulcerations are particularly observed in the apostematous phthisis, when the expectoration of purulent is considerable, and when in place of the appearance of mild pus, the discharge has degenerated into an ichorous state. This affection affection of the mouth has by some been ascribed, and probably not without reason, to the action of the expectorated on the mouth. To the same cause, acting upon other parts of the alimentary canal, especially

on the Intestines, has been ascribed another symptom, very common and very distressing, the colliquative diarrhoea, as well as colliquative diarrhoea colliquative sweats, With these as they are called supervening symptoms, and the continuance of Hectic it is by no means surprising, that the disease after arising at this state should in almost every case have a fatal termination. Having thus superficially mentioned the causes, and symptoms of Phthisis we will now proceed to a part of our subject, which we promise shall neither be tedious or lengthy

Much has been said about the treatment of this disease, and as in every other disease it is our provence to remove as far as is practi-

cable and as soon as is practicable, all exciting causes; and thus it must be an object with the practitioner, to counteract, as far as is practicable the ill consequences of purulent absorption. The means of affecting this removal must, in the different species, be accommodated, to the nature of that particular source from whence the purulence is furnished. In the Catarrhal Phthisis the source of that purulent matter which produces the symptoms is a mere inflamed surface; hence, our first indication of cure is to diminish that impetus with which the blood passes through the systemic but more particularly

the pulmonic circulation, a diminution of this impetus may be obtained in different ways. The second indication requiring to be fulfilled in the cure of this variety of the disease, is the restoration of a natural condition to the vessels of the lungs, and with a view of fulfilling this indication, much more is to be derived from regimen than from medicines, and particularly from gentle exercise, pure air, and a mild nutricious diet. In the treatment of Apostematous Phthisis much cannot be said, and we regret much that the same words are applicable, to the third and last or that stage termed Tuberculous Phthisis. Near-

by all of the most eminent writers, have introduced articles in the treatment of Phthisis Pulmonalis described by them as specifics in the disease, we must content ourselves by briefly mentioning those which have mostly excited the attention of the medical world.

We had occasion before to remark that different means had been employed for the purpose of lessening the force of the heart and arteries, and for this purpose the Digitalis of Dr. Beddoes has not held an obscure rank, but to speak in the words of an illustrious Potter like its author has sunk, perhaps to rise no more, this remedy we conceive to be not

only dangerous in its effects, but inefficient in its consequences, it should therefore deservedly be abandoned from the catalogue of medicines employed in the treatment of Phthisis Pulmonalis. Another article the deleterious effects of which upon the animal economy stands unrivalled within the covers of materia Medica, has excited attention in no small degree from the votaries of the healing art; and notwithstanding the train of pernicious symptoms, necessarily consequent upon its administration, sages worn out in the shafts of professional prosecution, sages whose eminence

and whose immortality has strengthened with their strength, and grown with their growth; has placed it as a curative in a superlative degree.

M. Gay Lussac says he has constantly found that the Hydrocyanic acid administered to the unhappy consumptive, not only appeased pain, but diminished frequency of cough, moderated and rendered more easy expectoration, and lastly procured the patient sleep at night, without any colliquative sweats; he goes on still further to state, that those who are accustomed to follow the march & progress of Phthisis and witness the suffering, without number of those individuals attacked

by this terrible malady and by which they are overpowered, will easily appreciate the benefit of this practice. Encomiums equally extravigant have been lavished upon the article, by men equally eminent, and perhaps equally aspiring. With regard to the employment of Emetics in this disease: they have been mentioned as being in all probability servisable, when not given in large or frequent repeated doses, of this class of medicines Tart: Ant: has been selected as being most servisable. All the class of Demulcents have been employed and as palliatives are considered to be very appropriate remedies. Another important remedy yet remains to be

treated of; the administration of Calomel, particularly in the inflamitory form of the disease, which we view as being the only form that can be cured, has acquired celebrity in a degree of no small consideration. Bloodletting in conjunction with the last mentioned remedy appear to be means placed in our hands by which we are to grasp from inevitable destruction myriods of the human family.

With those crude and undigested remarks we close, soliciting from the generous reader a liberal perusal of the same, and reminding him that upon our part it has been a matter of compulsion and not of choice.

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An

Inaugural Dissertation

on

Cynanche Trachealis

Submitted to an examination of

the faculty of the University of

Maryland

for the degree of Doctor of Medicine

by

John C. Wharton A.M.

of

Tennessee.

1828

To

Nathaniel Potter M. D.

This Juvenile Production is

most respectfully inscribed

By

The Author

This is a disease apparently of
Modern origin- I say apparently be-
cause altho it may have existed
yet it has not been described by any
of the Ancient with even a tolerable
degree of accuracy. To Dr Home of
Edinburgh is justly due the credit
of having first called the atten-
tion of the Profession to this in-
teresting subject- Dr Cheyne has giv-
en the fullest and best account of
this disease- Since "the enquiry of
Dr Home into the Croup" it has been
noticed by many Authors most of
whom have at least given a differ-
ent appellation to the disease, if

they have advanced nothing new with regard to its Pathology - Dr Scott of Edinburgh has called it Asthma Acuta, from the difficulty of Breathing which constantly attends the disease - By Dr Russel it has been termed Angina Inflamatoria - A variety of other names have been given to it; By one, it is called Catarrhus Suffocativus by another, Morbus Strangulatorius and by a third, Cynanche Stridula But of all its names that which has been adopted by Profr Potter seems to me most appropriate - Tracheitis

The Croup mostly attacks children between the second and seventh years of their age: a complete immunity from the disease is however enjoyed by no age - Adults are much less liable to attacks of this formidable malady than infants - This seems to be owing "says Dr Gregory" to some alteration which the mucous membrane of the Trachea undergoes about the age of Puberty - Altho the disease generally appears in a sporadic form, yet it sometimes

prevails as an epidemic, as was lamentably case in Virginia in the year 1793, when the Father of our country fell a victim to it.

It is not my intention in this essay to inquire concerning the great diversity of opinion which exists among Medical men with regard to the Pathology of this disease. Bronchitis or Croup is an inflammation of the Mucous Membrane lining the Bronchea, from which it is often extended to the muscles surrounding the Glottis; The case has ever it sometimes reversed, the disease commencing in the Muscles, and travelling downwards.

In the latter instance it must be confessed that some degree of spasmodic contraction of the muscles will occur; such however is the situation and office of these muscles that a complete closure of the Glottis cannot be effected.

This disease generally arises from improper exposure to Cold or damp Atmosphere. Those persons who are exposed to great vicissitudes of the

weather are much more liable to the disease, than they who reside in Countries uniformly Cold- and it is on this account that Cases of Spasmodics are most generally met with in the United States during the winter & Spring. The slightest causes will produce this disease in those Children who have once had an attack of it- in such constitutions a common Catarrh will almost invariably be followed by the Croup- It is however a fortunate circumstance that second attacks of the disease are seldom so violent as the first. They nevertheless require the utmost caution on the part of the Physician

Spasmodics has been thought by some very eminent Practitioners to be a contagious disease even the acute Dr Gregory seems inclined to adopt this opinion. Where are however so far as I have been able to learn no evidences of the fact- there is on the contrary every reason to believe that the disease is not contagious- The same cause which produced it in one child of a family may give rise

to it, in another; and if we admit the contagious character of Measles we must extend the doctrine so as to include all those diseases consequent upon the application of cold to the Body. But where can that individual be found who will assert that Catarrh Pneumonia or Rheumatism are contagious diseases? The same cause evidently produces all these diseases, and no reason can be assigned why any one of them is contagious and the other not. But whilst I deny the contagious character of this disease, I am willing to admit that it may be founded on Hereditary Predisposition. Dr Potter asserts that it is certainly an Hereditary disease, as Gout or Phthisis. I shall not attempt to discuss this question as it is one which can only be decided by experience, but shall proceed to enumerate some of the most common symptoms of the disease.

Some days previous to the attack of the disease the child

appear inactive and fretful, the eyes are dull and heavy- symptoms of Catarrh succeed, a hoarseness attended with a peculiar shrill and ringing sound in speaking and coughing, which has been happily compared to the barking of a small dog or Fox; it has also been supposed to resemble the noise from a Brazen Tube. Chilliness sometimes attends the first stage of the disease, a pain is felt about the Larynx, great difficulty of breathing, accompanied with a whizzing sound in inspiration, the cough is commonly dry but if anything is spit up it is generally a purulent matter; sometimes however films are discharged resembling portions of a membrane. Together with these symptoms the pulse is hard and frequent the patient is restless and complains of an extremely uneasy sense of heat. The Internal Fauces on examination sometimes exhibit no appearance of Inflammation

most frequently, however a redness and even swelling is observable. It is remarkable that the natural functions as well as those of the Brain are seldom much disturbed. Children are often seen running about taking their foods, indulging in the amusements peculiar to their age, apparently in good health whilst in reality the disease is rapidly advancing. If it progress be not promptly checked all the symptoms soon become much aggravated. The respiration is extremely laborious, the cough ~~difficult~~ troublesome and the expectoration more difficult and in a few hours suffocation closes the scene.

The duration of the disease depends generally upon its violence and the means which have been employed for its cure; when no artificial treatment has been resorted to, it almost frequently terminates fatally in about 24 or 36 hours

It is all important, that the alarming symptoms should be moderated during the first twelve hours of the disease; unless this can be effected the patient generally dies soon after. If however by the efforts of nature or by the assistance of art the child recovers from what has been called the second stage of the disease, the convalescence is always tedious, and attended with expectoration of portions of membrane. In milder cases where the breathing is less difficult in the commencement, about the second day the skin becomes moist, the fever abates, the cough is less troublesome, and the voice gradually recovers its natural tone.

A peculiar morbid appearance is observable in the examination of those who have died of this disease. a membrane or tube of coagulable lymph, is found lining the whole extent of the Trachea descending even to the bifurcation of the Bronchia. Dr Potter says this body is found not only through out the Bronchial ramifications

tion throughout many of their extreme
ramifications into the smallest vessels
as was beautifully illustrated in a sub-
ject prepared by the Dr for the demon-
stration of the late Professor Mitchell of
Philadelphia. This exhibits the Dr
is a secretion from the inflamed ves-
sels of the part, and is of all consistence
ies from the smallest change from
health to the secreting process perfect-
ly formed in inflammation. The
secretion of the more compact form
to which the appellation of membran-
has been given, seems to be the fibrine
of the Blood semi-organized. Al-
tho this membrane is generally found
in the Trachea of those who have
died of Croup, still it is not to be
considered either as a constant or
necessary part of the disease. Dr
Gregory has observed that its for-
mation is always indicated by the
manner in which the child breat-
hes, throwing the head back so
as to put the Trachea on the stretch.

With regard to the treatment of this
disease there seems to be some diversity

of opinion among Medical men. A Pathological distinction has been made by some which is of no practical importance. If there be such a thing as a primary Spasmodic Croup, it must invariably depend upon an Inflammation of the muscles of the Glottis, and therefore the same remedies are to be employed in the first stage of the disease, whether it be an inflammatory or Spasmodic affection.

The Croup has been divided into two stages; the first being that of high inflammatory action. The second is distinguished by the formation of that preternatural membrane already spoken of. In the first stage, it should be our object to subdue Inflammation by all the means in our power and thereby prevent the formation of that membrane which "blocks up the passage of air into the Lungs, inducing suffocation and consequently death." To accomplish this first indication the most powerful antiphlogistic remedies should be promptly em-

employed- our chief reliance is to be placed in general and Local Bleeding emetics, the warm bath, and purgatives If however we do not succeed in relieving the first stage of the disease, it then becomes our duty to endeavour to promote expectoration, and to support the Strength of the System, which is generally much weakened by the previous depletory measures- for the purpose of answering these indications recourse may be had to to squills, Camphor opium, and other Tonic medicines an occasional emetic may also be exhibited and as a last resort Bronchotomy- has been recommended

I shall now say a word or two with regard to the particular remedies which have been recommended for the cure of this disease, and first of Bloodletting- This in my humble opinion is our Sheet Anchor It is never injurious it may however sometimes be unnecessary In the milder form of the disease where there is not much inflam-

natory action, an Emetic will often supercede the necessity for the employment of any other remedy- One bleeding in the first stage of the disease is of more importance than half a dozen afterwards-

Emetics are always necessary and should never be omitted for this purpose the Tartar Emetic or Ipecacuanha may be employed- If however after being given in very large doses they fail to produce the desired effect, the Corrosive Sublimate may be resorted to with the greatest advantage- The exhibition of small doses repeated doses of Calomel from the commencement of the disease, has been strongly recommended- "This practice" Says one in whose skill and experience I have an almost unlimited confidence" is rather calculated to injure the reputation of the medicine, than to cure the patient- It should be given in doses so large as to shock most of the

mid. Practitioners of the present day
who are deterred from employing this
valuable remedy to any useful extent
by the fear of salivating their Patients
Dr Potter says there is but little danger
of producing a severe Ptyalism by
Calomel in this disease. he has seen
but one case out of several hundred
in one of these remedies should
be relied on in violent cases to the
exclusion of the others. Bloodletting
being premised a judicious com-
bination of Calomel & Tartar Emetic
will generally cure the Patient.
nor should the assistance of the
warm bath be dispensed. The appli-
cation of Blisters to the Throat has
been recommended. its propriety is
I think very questionable. It seems
to me that the irritation of the
Blisters may sometimes extend to
the inflamed membrane, and
consequently aggravate the dis-
ease. The decoction of Polygala
Senega has been lately introduced
into the practice as a remedy for
this disease by Dr Archer of Mary-
land. It is my opinion too stimu-
lating to be of any advantage in

e first stage of the disease - when how
er the inflammatory symptoms have
en in a great degree subdued - its em
layment will ~~in my opinion~~ generally be attended
with the most beneficial results - It
s unnecessary for me to say any thing with
gard to the other medicines which
ave been recommed in this disease - it
he first stage they ~~may be beneficial~~
must be injurious, in the last they
may be useful - Bronchotomy is al-
together inadmissible in Croup - for this
simple reason, that we are unable there-
ly to remove the membrane which is
the cause of the obstruction - and besides
it prevents us from employing other rem
edies -

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An Inaugural Dissertation
On
Pulmonary Consumption.

Submitted to the Consideration
of the
Provost, Professors and Trustees
in the
University of Maryland
for the degree of
Doctor of Medicine
by
Bennett Bussey
of
Maryland.

1828.

Pulmonary Consumption is a disease, concerning which a variety of opinions have been given, and even at the present day Physicians widely differ with regard to its Pathology; some contend that the disease never appears without the presence of tubercles in the lungs, while others say that Pulmonary Consumption can exist independent of a scrophulous predisposition.

As it would be not only tedious but also useless to attempt an elaborate discussion of a subject, which probably may never be decided, I will briefly submit my opinions with regard to the real nature of the disease, enumerate the principal symptoms and mention those remedies which appear to be most useful.

By the term Pulmonary Consumption, I wish to imply that disease, which is the consequence of Tubercles seated in the cellular connecting membrane of the lungs. Whether or not this term could be properly applied to other diseases of the lungs it is not for me to decide, but merely for the sake of precision, I am disposed to think, that the peculiar wasting of the body and of the lungs caused by the inflammation and suppuration of tubercles seated in the lungs, alone deserves the name of Pulmonary Consumption.

Those who have tubercles in the lungs are evidently of the strumous temperament, and it still remains to be proved

whether or not tubercles be ever formed in the lungs without an hereditary predisposition to them:
The strumous Temperament appears under Two modifications, The one is found in those who have, naturally, pale skins, loose flabby fibres and a sluggish pulse; The other in those who have ruddy complexions, firmer fibres, and a brisk circulation And in both modifications there is an unusual irritability of the capillary arteries;
In children we can generally determine whether or not they are predisposed to Phthisis, by the smooth and rosy appearance of their cheeks, their fair hair and delicate blue eyes: The forehead is generally prominent, and it is remarked that the lips of scrophulous children are tumid;
As the child advances in years we perceive the swelling of different glands of the body, which as the patient progresses in age, progress in growth: and I am disposed to think that almost all of those diseases, which we hear spoken of as affecting different Joints, are no more nor less than the effects of Scrophula;
As the general characters of Scrophula are so well known I will not longer dwell upon them, but proceed to describe its appearance in the form of Pulmonary Consumption

This disease seldom appears before the age of puberty. It is usually excited by causes which produce Inflammation. The patient complains of a weight or uneasiness in the chest, this sensation is attended by a cough which is generally dry, short and tickling, there appears to be considerable excitement and the face is usually flushed. The pulse is frequent and sometimes tense.

As the disease progresses, the pain in the chest becomes more acute and often extends to one shoulder.

The cough becomes more troublesome, and at length the expectoration comes on: The lips of the patient are generally preternaturally florid.

At this stage of the disease Hectic symptoms are more apparant. The patient is harrassed with evening fever and night sweats. These symptoms continue till the pus formed by the suppuration of the tubercles in the lungs has been expectorated, which in the early part of life will be accomplished in a short time.

The patient is then considerably relieved for that period and has few unpleasant or alarming symptoms until the same process of Inflammation and suppuration comes on. The patient however is not entirely relieved from Hectic symptoms; some cough and fever still remain.

As the patient still advances in life, the general health becomes more impaired, from the repeated struggles which he has survived, and his whole system becomes reduced. From long continued hectic fever. Nights are spent without repose, and each returning day presenting the same or a worse condition of his system, renders life almost a burden.

In the forming stage of Pulmonary Consumption, we have many remedies which exert a very beneficial influence, in warding off the disease, but when Phthisis becomes confirmed very little can be accomplished by the Physician. In the forming stage or before inflammation of the tubercles has progressed in any considerable degree, Bloodletting is a remedy of inestimable value. Digitalis has been used with the same view but it has been observed "That the injurious effects of digitalis often precede its good effects" and I would suppose that in every case of Consumption the lancet will accomplish every object which could be expected from Digitalis. Blood should be drawn in small quantities, and the operation should be frequently repeated. There are many cases of Phthisis in which Mercury given with precaution, exerts the most salutary effects. Cases in the forming stages, which are not attended with considerable action, have often been prevented from terminating in suppuration, by using

the Blue pill so as slightly to effect the gums.

Those who are predisposed to Pulmonary Consumption, should be very cautious in their dress. Flannel should be worn next the skin in winter by all, and in summer also, by the more delicate. It preserves the equilibrium of temperature, and prevents the system from being injured by every change of weather, and as our climate is so very precarious, it is my opinion, that this prescription should by no means be neglected.

Another important prescription, is Exercise. The Consumptive patient, in clear weather, should take exercise freely, particularly in the mornings, it gives tone to the digestive organs, and invigorates the whole system.

Attention should be paid to regimen and diet. The patient should take animal food in moderation, and it should be the principal article of food. All irritating and indigestible articles should be avoided.

Blisters or setons are almost indispensible in the prevention of this disease. A discharge from the surface should constantly be promoted by either a blister or a seton.

The cold Bath has also been highly recommended by some Physicians. But the most effectual means for preventing this disease is a Removal to a warm climate, and to a climate which is free

from many vicissitudes of weather.

These are the principal means which are used for the prevention of this disease. When Consumption becomes confirmed, as I before observed, very little can be done by the Physician however we have some medicines which afford some relief. Opium is generally freely used in the latter stages of Consumption. When the patient passes nights without sleep, has great irritability, and is harassed by a continual cough, I am of opinion that Morphea might be given with great advantage as it possesses all the sedative but none of the stimulating qualities of Opium. This also will answer every purpose for which Prussic acid has been given.

When the colliquative sweats are copious. the balsom Copaiba given as a Diuretic generally lessens the sweat.

As I intended merely to make some general remarks on this disease, I will end, after mentioning some diseases which may be mistaken for Pulmonary Consumption, and mentioning some differences which distinguish them from true Phthisis.—

Ulcerations in the Trachea has often been mistaken for Pulmonary Consumption. This often arises from an insidious inflammation. It is attended with a tickling cough, the voice is slightly

changed, and uneasiness is experienced in some part of the Trachea. The breathing is sometimes oppressive, and there is generally slow increasing fever. Inflamation of the adjacent parts also very often exists at the same time. In the first stage of this affection mucus and lymph are expectorated, but as soon as ulceration takes place the sputa are mixed with pus. After this disease may have continued for some length of time fever is manifested, but it is not attended with the copious night sweats which characterize the true Hectic. When inflamation of the Trachea becomes chronic soreness is felt by pressing on the Trachea which sensation is not experienced in Pulmonary Consumption.

Chronic Inflamation of the Bronchiæ is another disease which may be mistaken for Consumption. It at first resembles a common Catarrh, but by the increasing fever, and duration of the disease we are made sensible of its nature. When it has progressed so far as to make an abscess in the lungs themselves it is very difficult to distinguish it from Tubercular Consumption. In the first stage it may be distinguished by the wheezing and Catarrhal character of the disease and by the patient not wasting flesh and strength as always happens in Tubercular Consumption. The face

from the onset assumes a sickly pallidity, and the lips are of a leaden hue, Whereas in Tubercular Consumption the face is alternately pale and flushed and the lips are beautifully tinged with a bright red.

When the more acute forms of Pleurisy have been subdued an obscure kind of increased action is often left which sometimes becomes chronic. This however may arise without being preceded by acute Inflamation. The patient has slow fever at night and has oppression in the chest. There is occasional cough which is most troublesome in the morning. Soreness will be felt in the integaments of the side effected, particularly if pressure be made. The disease progressing dyspnea and emaciation are the two principal symptoms. In this stage it can be distinguished from Phthisis by the colour of the patients skin, and the difficulty of breathing which is increased by using the least exercise.

Chronic Inflammation of the lungs themselves has very often been mistaken for Tubercular Consumption. This disease in its progress bears a strong resemblance to Tubercular Consumption but a history of the patients life preceading the attack, and by procuring a knowledge of the healths of the patients predecessors, we can generally ascertain whether or not the latter disease exists.

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An
Inaugeral Dissertation
on
Hydrocephalus Internus.
Presented
For
The consideration of
The Faculty of Physic of
The
University of Maryland
by
Charles F. Hughes
of Baltimore

March 16th 1828.

To Alexander Glendinen M.D.

The following Inaugural Dissertation is most respectfully dedicated, as a tribute of sincere gratitude and high respect for the many kindnesses and valuable advice received from him by me, while pursuing my medical Studies under his able guidance and fostering care

Chas. F. Hughes

March 16th 1828.

Introduction

The many difficulties which present themselves to the mind of the writer, in selecting the subject of his Inaugural Essay, influence in a great degree his choice. It cannot however be expected that one who has neither age nor experience to support him, can produced any thing new in relation to disease. — I shall therefore content myself by giving so far as my limited abilities and time will enable me, a history of the causes, symptoms and treatment of the disease under consideration, known by the term Hydrocephalus Internus. Having chosen this subject for the following pages, it is my intention "safely to tread the beaten track," and with this view shall quote the opinions advanced by Whytt, Quin, Rush & others

Hydrocephalus Internus.

The earliest correct description of this very interesting and too frequently fatal disease was, as well as I am informed given to the world by Whytt, whose observations on it, were not published until the year 1768; This valuable Author describes with great accuracy the cause and advancement of the disease. —

Cullen in the edition of his nosology, published in 1785 recognizes this disease under the term Apoplexia Hydrocephalica.

Quin of Dublin, in his Inaugural Dissertation published at Edinburgh in 1779, and a subsequent Essay in 1790 describes Apoplexia Hydrocephalica with much more accuracy and proposes ideas altogether new as to its theory. —

Rush, our celebrated countryman not long afterwards adopted a similar theory of the disease to that of Quin, & in his works, has given us a paper in which he mentains the inflammatory nature of Hydrocephalus Internus. —

Whytt in speaking of its Proximate cause, seems to make it depend upon a loss of balance between exhalation and absorption; And indeed this was the opinion of the

ancient as well as the modern writers, concerning dropsies in other parts of the body.

Rush suggested the inflammatory nature of this disease in his Inaugural Essay, written in 1770, and in a treatise subsequently, confirms this view of the disease, by additional observations and numerous cases of dissection.

The same opinion was adopted by Reith, (med. Obs. Vol 2 page 193) about the same time, to which increasing weight is given by discoveries in dissection, shewing the fortunate issue of many cases treated by Anti-phlogistic remedies.

The writer would venture to defend the opinions of the two last named authors; and for this purpose he conceives it will be necessary attentively to consider the causes of this disease, the symptoms and the mode of practice, which has been found most successful in treating it.

Hydrocephalus Internus, may probably be divided into primary and secondary.

Rush enumerates the following causes "falls or bruises upon the head, certain positions of the body and childish plays, which tend to induce congestion, inflammation and subsequently an effusion of water in the brain." Now we have every reason to conclude from these very valuable remarks, that falls, bruises or blows on the head, do produce inflammation

not only of the external integuments, but also the lining membrane of the Cranium; which too frequently terminate in Suppuration and Gangrene. The other direct causes mentioned by Rush to which more might be added, especially the influence of the Sun or of a reduced temperature, can scarcely be supposed to act in any other way than by increasing the quantity of blood in the vessels of the brain, and resulting in an inflammatory action in them. — The causes enumerated by Rush as acting indirectly in producing the disease under consideration, are surely fitted to produce an inflammatory ~~action~~ disease; these are states, either of inflammation or irritation in other parts of the system; and when the disease is thus produced there is a mere translation of it, and not a change of morbid action; Surely, the membranes and the structure of the brain are different from that of other parts of the system, but then, they have not the power of producing an action in the vessels, sui generis. The effect of their operation therefore upon the brain must be an excitement of irritation or inflammation. These causes are, 1st Intermittents Remittent and continued fevers, 2nd Rheumatism, 3 Phthisis Pulmonalis, 4 Eruptive fevers & Worms. —

Having briefly noticed the causes of this disease, I propose next to take notice of the symptoms which attend it, and also of the appearances upon dissection after death, being further

proofs of its inflammatory nature.

The symptoms of Hydrocephalus Internus as related by Whytt appear to me to be as minute, at least, and as correct as those detailed by those who wrote subsequent to him, however as the work of Quin is more modern and sufficiently correct, I will insert his description of the symptoms.

In general the patient is at first languid and inactive often drowsy and feverish, but at intervals, cheerful and apparently lively, and free from any complaint. The appetite is bad, often nausea and vomiting occurs through the day, the skin hot and dry towards evening. Soon after these symptoms appear the patient is attacked with sharp headache, chiefly in the forepart, and if not there, in the crown of the head, it is sometimes however confined to the side or sides of the heads, and in that case, when the posture of the body is erect, the head often inclines to one side, particularly that side affected. This headache is also frequently accompanied with an affection of the stomach, the vomiting being more troublesome when the pain is less violent and vice versa.

"The light is disagreeable to the patient at this period cries much, sleeps but little, and when he does sleep, grinds his teeth, picks his nose, appears to be uneasy, often screaming as if greatly terrified. The bowels in a majority of cases

are much confined, though it sometimes happens that they are in an opposite state. The pulse in this early stage does not indicate any material derangement.

When the symptoms above mentioned have continued for a few days, subject as they always are in this disease to great fluctuation; the axis of one eye is generally found turned inwards to the nose, and the pupil upon that side rather more dilated than the other. And when both eyes have their axes turned inwards (which sometimes happens) both pupils are observed to be larger than in health. The vomiting becomes more constant, and the headache more excruciating. At this period every symptom of fever makes its appearance; the pulse is frequent, the breathing very quick and exacerbations of fever take place towards evening, the face occasionally flushes, usually one cheek more than the other, temporary perspiration breaks out, but does not alleviate the condition of the patient. Epistaxis takes place about this period; also delirium and that of the most violent kind, particularly if the patient has arrived at the age of puberty, which together with all the preceding symptoms of fever, continues for a while to increase, until about the fourteenth day, often a much shorter space of time shall have elapsed since the appearance of the symptoms which were first mentioned in the above detail.

the disease unaccepes that change which suddenly points out the commencement of what has been termed the second stage. The pulse becomes slow, but unequal, both as to its strength and the interval between the pulsations. The pain of the head or whatever part of the body had previously been affected, seems to abate, or at least the patient is less sensible to it, the interrupted slumbers or perpetual restlessness which prevailed during the earlier periods of the disease are succeeded by an almost lethargic stupor, the strabismus and dilatation of the pupil increases, the patient lies with one or both eyes half closed, which when minutely examined will be found almost completely insensible to light. The vomiting ceases, and whatever food or medicine is offered, is usually swallowed with apparent voracity, the bowels at this period generally remain obstinately costive. ——

"If every effort made by art fail to raise the sinking powers of life, the symptoms of what has been called the 2 stage are soon succeeded by others which more certainly announce the approach of death. The pulse again becomes equal, but so weak and quick, that it is almost impossible to enumerate it. A difficulty of breathing nearly resembling stertor (apoplectic) is often observed, sometimes the eyes are suffused with blood, the flushing of the face is more frequent than before, but of shorter duration, and followed

by a deadly paleness; red blotches sometimes appear on the body or limbs, deglutition becomes difficult and convulsions generally close the scene."

The symptoms not less than the causes of Hydrocephalus Internus, demonstrate its inflammatory nature. The intolerance of light, the morbid sensibility of the auditory nerve, the delerium and flushings of the face can be explained upon no other principle.

One or two more points shall be noticed under this head in favour of the inflammatory nature of this disease; one first of the discoveries after dissection. — In resorting to the evidences of morbid action shewn by human dissection, especially when connected with a knowledge of the progress of the symptoms during the continuance of the disease, we may be considered as appealing to the highest source of information with regard to the phenomena of diseases. Three particulars are to be noticed in attending to the appearances after death; — 1st; The thickning of the membranes of the brain the existance of inflammatory crusts, and the engorged & distended state of the blood vessels. The frequent occurrence of these things as consequences of inflammatory diseases of the Thorax and Abdomen, cannot or ought not to leave the least shadow of doubt with a candid and intelligent mind, that the same appearances of those deaths of

Hydrocephalus arise from the same cause. 291

In speaking of the appearances on dissection of those who die of Phrenitis, a highly respectable author says "There is often a quantity of watery effusion into the ventricles" "When we compare these appearances with those who have died of Hydrocephalus, we cannot help, I think, regarding this disease as a species of Phrenitis" (Wilson on febrile diseases Vol 2 page 96) The effusion into the joints which follows acute Rheumatism, & that which succeeds to inflammation of the Pleura, Peritoneum and other internal surfaces, would seem at least to give countenance to the supposition that the fluid in Hydrocephalus is produced by the same cause. I admit that the analogy here presented does not unanswerably prove this to be the case, for by assuming this position we must deny that Dropsical affections ever do arise from any other cause than inflammation, which I am not prepared to do. The thought just hinted at leads to the consideration of the last particular in relation to the appearances upon dissection, (3dly) which is the peculiarity of the fluid, viz its refusal to coagulate by heat; and this property distinguishes it from ordinary Dropsical effusions and proves it to be a fluid thrown off from the circulating blood either by secretion or some equivalent process. Every Professor of the Theory and Practice has taught us that incoagulability is a property belonging to Dropsical effusions

into every cavity, and therefore infer that Dropsy in whatsoever part of the body it may occur, is an inflammatory disease.

In Quin's treatise (appendix 2 case 12) there is an instance of fluid formed as the brain being coagulated by heat. With the exception of this single case, I neither know or ever heard of any circumstance to support the general doctrine.

This property of incoagulability, as before mentioned distinguishes it very pointedly from serum. It's a changed fluid, and from the symptoms of the disease of which it is an immediate consequence, we have sufficient reason to believe that it is the result of inflammatory action. This theory of the inflammatory nature of the disease under consideration, receives additional confirmation from the constitution and temperament of the subject whom it most frequently attacks. It is, says Fothergill vol 1 page 71, a disease that happens, so far as I have had an opportunity of observing, most commonly to lively, healthy, active children in whom if ever acute diseases rather than of a low active, a debility may be surprised to prevail. The next point to be noticed according to the arrangement of this treatise, will be the means of cure, which have been found most effectual in the treatment of Hydrocephalus Internus. However, before entering upon this part of my subject, I will say a few words relative to a prevention of this fatal disease.

The means of prevention may be classed under two general heads, each embracing many particulars, too numerous to be related here. The first general means of prevention is, avoiding all the direct causes which tend to excite the disease. Second, by endeavouring to remove as speedily and effectually as possible, all those diseases which act as indirect causes, in producing it. — The first head of precautions may be addressed to the nurse, or the patient, for this disease is not confined to children alone; and the second more properly is addressed to the Physician.

Having premised these reflections on the preventive method, I will now return to the consideration of the remedies which have been found most useful.

The first means to be noticed is bloodletting. And this exhibits another most decisive proof of the correctness of the theory adopted in this treatise. Venesection, though recommended by Quin in his list of remedies, was unfortunately but seldom resorted to by him, if we may be permitted to draw any conclusion from the cases reported to have been treated by him. In seven cases successfully treated by our celebrated Rush, venesection was practised more or less in every case. This remedy should be adopted in the early part of the disease, and should be frequently repeated, always taking care to consult the pulse. Bloodletting from the

Jugular vain has been recommended by some; this however has its disadvantages. Blood drawn from the arm, in a proper manner will reduce the general excitement as effectually and equally as quick as if taken away from any other part. — Local bloodletting, I conceive to be of great advantage — The great importance of this will be very evident, for while general bloodletting only reduces the force of the circulation, local bloodletting tends to relieve the distended and engorged state of the vessels of the part affected; which state is not only the cause of the effusion so much to be dreaded, but also acts as the cause of excitement of the general system. — The second remedy is Blisters. — There has been and still is much diversity of opinion relative to the modus Operandi of blisters among Medical writers and practitioners. That they act as a stimulus to the part applied as well as generally, cannot be denied; A secondary, tho' not less important, is the abstraction of a portion of the more fluid part of the Blood. Rush says, they are proper in every stage of Hydrocephalus Internus. In the early part of this disease their application should be prefaced by general bleeding; and it is proper to keep up the discharge from the blistered surface for a short time, the better to secure your aim; and for this purpose the Ungt. Epispast. may be used to great advantage. Setons and Issues have been recommended by some; but in my

opinion they are too slow in their operation for a disease of this nature.

Cathartics, are the third class of remedies to be noticed. They should be assiduously employed from the commencement and the best agents for this purpose are, probably the cooling salts. They are more speedy in their operation and seem to occasion larger watery discharges. A combination of Sup Tart Potasse and pulv: Jalapa or Jalap and nitrate of Potash will be found very useful. Calomel is more or less recommended by all writers. When used to procure a purgative effect, it should be combined with one or more of the above named remedies. In an advanced stage of the disease, Mercurial friction may be resorted to, but should not be depended upon alone. As the bowels are disposed to be torpid in this disease, much larger doses will be requisite, than under ordinary circumstances. Cold applications come next to be considered. – Cold water vinagar and water or pounded Ice put into a bladder, have all been found of much service in abstracting heat from the head. The application of Æther or other vapourizable fluids, by their sudden absorption of a large portion of Caloric, are undoubtedly calculated to produce a good effect. The position of the patient is by no means an unimportant

consideration. The head should be as much elevated as convenient; the room kept perfectly dark and very cool much light being very injurious. All noise should be avoided in cases of morbid sensibility of hearing.

As premised in the introduction nothing original is pretended on my part. — On my humble opening however the credit of first shewing this to be an inflammatory disease belongs of Quin. This Theory, plausible and defensible as it really is, would indeed merit but little estimation were it not that it leads to a system of practice which experience has proved to be far more successful than any other which has been recommended. It is this correspondence between the Theory and the results of practice which gives to the former their only value.

By a course of strict investigation and close observation, Quin and Rush, have established the true nature of the disease which has been the subject of this Essay, and they have instituted and recommended a course of practice which if attentively pursued, promises more than any other, to restrain the ravages of Hydrocephalus Internus.

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An
Inaugural Dissertation
On
Hydrocephalus Internus
By
Edward H. Lowndes

For
the Degree
Of Doctor of Medicine

Maryland. March 15th 1828

Perhaps there is no disease in Nosology which is described by such a variety of names as the one which I have selected as the subject of my Inaugural Dissertation. Although we call Hydrocephalus a disease, it is more, from the tyranny of custom than strict pathological accuracy, as the derivation of the term implies, it is a collection of a watery fluid secreted in some part of the brain, and is the effect of a slow chronic inflamation of that organ. it is described by Doctor Cullen under the title of serous apoplexy, but the fluid which is found in the brain of those who have died of this affection does not resemble serum, except in appearance as it will not coagulate, by heat or any chemical agent; therefore we cannot

with strict propriety subscribe the neither
Serous apoplexy, others again describe the
disease, as a chronic inflamation of the
brain, Renetis chronica vel subacuta, this
appellation is more suitable than any other
to the condition, in which the vessels are
in, at the time, the fluid is deposited
and is therefore, a more appropriate term
I think than any which has, as yet been
applied, Doctor Good in his excellent work
on the study of medicine, calls it Cephalitis
profunda, what his object could have been
for adding profunda, I cannot conceive
otherwise than he intended that the water
y secretion always commenced in the
ventricles, which are situated in the interior
of the Brain, if that was the Doctors object
he is certainly correct, as that is the usual
situation of the incipient secretion

although he may be correct as far as respects
the seat of the disease; I cannot subscribe
to his opinion concerning the proximate cause
the Doctor thinks debility to be, the proximate
cause of this, as of all other forms of dropsy
by debility I understand a relaxation of the
exhalents, and consequently an infiltration
of the serous or thinner parts of the blood
through the patent mouths of the exhalents
in this respect he does not differ from
Doctor Cullen, except in the name of
the affection, as both perfectly as to the
nature of the fluid agree; there are some
who suppose the proximate cause of all
dropsies to be a debility of the absorbents
and among the advocates of this theory
Doctor Darwin was the most prominent
who is deservedly more celebrated for his
poetical, than medical productions

It was at one time a popular opinion, but which is too often, but another name for popular error that this affection, was generally intimately associated with a scrophulous diathesis of the general system, there are instances of congenital Hydrocephalus, where a separation of the cranial bones has taken place to an almost incredible distance, and children under such circumstances have lived in apparent ease and comfort for several years.

Such occurances as these are sometimes supposed to depend upon, an hereditary scrofulous taint but it is a subject as yet subjedice, and would afford abundant materials, for the theoretic speculations of those, whose genius may unravel the mysterious and almost inscrutable intricacies of its causes, such instances are comparatively rare, and generally

come under the cognisance of the obstetrical Tradition
the few remaining advocates of the imperfect
elics of the gastric pathology, think Hydro
cephalus to be frequently connected with a
disordered state of the chilopoietic viscera
when this is the case, the Brain I imagine
s predisposed, and the congestion of the diseas
d viscus, excites the action of the heart, and
the Brain being the weakest part, it conseque
ntly must be the first to suffer and when it
does, the vessels take on a secretory action, and
deposite the fluid in the ventricles. the presence
of worms in the intestinal canal, occasion
ally give rise to symptoms of Hydrocephalus
but such symptoms are speedily removed, by
the exhibition of proper Anthelmintic
medicines. our illustrious countryman Doctor
Rush who is deservedly acknowledged; to have

written one of the best chapters, in his enquiries
on Hydrocephalus, that has ever been presented
to the medical world, he thinks, that in the
very highly acute form of Phrenitis, the inflamma-
tion is so great, as to transcend the grade
of secretion, as is frequently the case in cynanche
trachealis, and hence the term cynanche sicca
the Doctor thinks that the vessels of the Brain
are in a condition, intermediate between that
of serous apoplexy, and the high inflammatory stage
of Phrenitis, consequently they are labouring under
chronic inflammation, a condition which is
certainly the most favourable for that secreto-
ry process which takes place, at the time the
fluid is deposited; now if we impartially take
into consideration the causes which operate
on the brain in producing this disease, and the
nature of the fluid, which is deposited

we must certainly view Hydrocephalus to be the effect of a chronic inflammation, wherein the vessels assume the function of secreting vessels as they frequently do in chronic rheumatism producing permanent lameness, the greatest source of error in the treatment of this disease with many Practitioners was in considering it a disease of debility; but the great oppressent languour and debility, which attends those labouring under it, is always partially removed by bloodletting; equally as much blood can be frequently abstracted in such cases as in gastritis where the pulse is not the surest and most infallible criterion before bloodletting, we cannot for a moment suppose that it is debility which induces the patient to complain in a low muttering tone of his head, debility would not in the first instance

cause the pupil to contract, and the retina to be morbidly sensible to light; as the disease advances, and the pressure on the Brain increases, the origin of the nerves must be equally affected, and deprived of their usual energy and power, the pupil then dilates, and the retina is capable of bearing a stronger light. From the records of medicine, and personal observation, it would appear, that this disease was in some families constitutional; the vessels of the Brain in those persons so affected, I imagine are in a very excitable state, and the first exciting cause, which is applied in the to them to take on a secreting action as this disease is always in my opinion produced by the usual causes of inflammation; and most frequently succeeds

those inflammatory fevers, which have not been
properly treated by bloodletting, and other
antiphlogistic remedies; where there is a great
determination to the head. I am confident
I do not stand alone, in considering
chronic inflammation as exclusively its
proximate cause; and in considering
the disease as the effects of inflammation
I shall adopt a course of treatment
strictly antiphlogistic, as the conclusion
of my thesis; which I think is applicable to
it according to the views I have taken, and the
theory I have adopted of its cause.
Although the absorbents are never primarily
affected, in the incipient stages of dropsy
they are concerned in its cure and that
actively from the circumstance of their taking
up the fluid which is deposited, and

and removing it from the system by the
different emunctories: and from the circumstance
of the doubt, which has, for a long time agitated
the actions of medical science, as to the presence
of absorbents in the Brain, this formidable
affection has been looked upon as an incura-
ble disease, although the diligent and
persevering Anatomist has failed to prove
the existence of lymphatics in the Brain
by ocular demonstration; nevertheless can
we for a moment doubt their existence
we certainly admit the Brain, the sup-
posed seat of all our intellectual opera-
tions, to be an organized body, and as such it
must be endowed with lymphatics.
But we have a stronger proof than this
in favour of our position; have we not both
read and heard of large portions of Bra

being removed, and what other outlet could there have been, except it was through the medium of the Lymphatic System; then if large portions of diseased Brain could be removed, and without the least detriment to the Patient, surely, the watery secretion can be, which very much disturbs the general health; our object, should then be in the first place, to lessen the action of the heart and thereby, put a check to this secretory action which is going on in the vessels of the Brain, which is most promptly and effectually done by the lancet, we should not be intimidated at on viewing the depression which the patient, is apparently almost overcome with, such symptoms usually attend compression of the Brain from other causes

such as extravasated blood, and collections of matter within the encephalon; because we cannot draw ten or twelve ounces of blood from a child laboring under this disease, we should not, on that account refuse to draw any; how many valuable lives have been rescued from the confines of the grave, by the abstraction of four or five ounces of blood, by a judicious practitioner. If we turn our attention to the state of the circulation, we will generally find it to be in that condition, which imperiously demands the use of the lancet; we should not be deterred, by small pulses provided they be hard and tense, from drawing blood particularly in cephalic affections, as they almost invariably improve, after the operation has been performed; after bloodletting,

has been carried to its proper extent, a ques-
tion naturally arises, have we no auxiliaries
to it, I would answer in the affirmative
calomel from its well known power of
promoting absorption, would be an excellent adju-
vant in the treatment of this formidable
affection, especially when it is carried
to that extent as to affect the salivary
glands; more have recovered from this disease
under a salivation, premised by proper evac-
uations by the lancet, than under any
other mode treatment; issues &c, I imag-
ine might also assist in the cure of this
disease, but too much reliance, should not
be placed on them in such a formidable
affection

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A Dissertation on

Pneumonia

Submitted to the

Professors and Trustees of the

University of Maryland

For the degree of Doctor of Physic

By Leander W Goldsborough

Of Frederick City Md.

March 15th 1828

To Dr Charles H Goldsborough

This essay is affectionately inscribed as a testimonial of gratitude for his care and attention whilst superintending the authors advancement to professional life.

Introduction. The difficulty of writing without experience and the hazard of attempting subjects about which there exists great diversity of opinion is sufficient to make every one cautious in selecting the subject of his inaugural thesis. Influenced by these considerations we have fixed upon a disease which although pretty well understood is still possessed of sufficient interest to require the attentions of physicians. As to originality we claim none, none can be expected, all we wish to do and all we shall attempt is to treat the disease as it has been treated and to point out what we shall presume to consider as errors too generally received.

Pneumonia.

Pneumonia derived from pneumon a lung is a genus of disease in the class pirexiæ and order phlegmasiæ of Dr Cullen. Under this title he comprehends "the whole of the inflammations affecting either the viscera of the thorax or the membrane lining the interior surface of that cavity." This is certainly the most judicious plan of treating the matter, for had he attempted to distinguish between the varieties of different authors he must have failed, but if he had succeeded, what advantages would have resulted from it? In a practical point of view none. The rapidity with inflamation of the serous membranes spread is itself sufficient to upset the

notion of giving names in this disease derived from the part supposed to be affected. As to the term Peripneumony although some may doubt the existance of such a case, it is more than probable that it frequently occurs, and is always characterized by greater violence than the inflamation of the pleura. But as we cannot always distinguish the one from the other and as perhaps in neither case is the inflamation exclusively confined to either the substance of the lungs or their investing membrane the word might be abolished; or if retained, retained only to express a more violent pneumonia.

Symptoms. This disease comes on with occasional chills and flushes of heat, accompa:
nied

with the usual disagreable sensations ushering in all febrile affections. The patient becomes restless, the pulse quick and the skin preternaturally warm. He begins to cough and complains of pain in some part of the thorax.

These symptoms continue to increase the skin becomes hot, the pulse quick strong hard and full. The cough which at first was moist is now dry and excessively painful.

The breathing is difficult and irregular in consequence of the pain being increased by a full inspiration. Which (the pain) is now completely developed. It is not always fixed, sometimes it is felt in one part of the thorax and sometimes in another. It is generally more severe on one side, frequently the right

but as often on the left, in either case the
patient cannot lie well on the side affected.
As in all violent inflamations the secretion
are ~~are~~ checked, the tongue is furred and
the urine high-coloured. Having detailed
the symptoms as well as I could we shall
proceed to say a few words about the
Causes. This disease most frequently happens
in persons of vigorous constitutions, and those who
are much exposed to the vicissitudes of weather.
It most frequently happens in the spring though
it may occur at any season of the year and to
all ages sexes and conditions. Cold applied
to the body in some form or other is univer-
sally admitted as the most frequent remote
cause, though it may arise from others as excess

exertion of the lungs, drinking cold water when warm and perspiring is mentioned in Johnson's journel as having caused the disease.

Terminations. The most frequent termination of pneumonia is by resolution this may be known by the gradual manner in which the pulse is restored to its natural standard at the same time that the cough pain and difficulty of breathing subside with the return of the different secretions. Suppuration is another termination of this disease; the tendency to which may be ascertained by the pulse becoming softer and more frequent by the patient being affected with slight chilly sensations with a pale and anxious countenance. The pain is less acute and

when togather with these symptoms or rather as they advance, the difficulty of breathing continues the pain subsides or is remarkably dull and obscure with a weighty sensation in the side we may generally infer the existance of matter. Other terminations of pneumonia are spoken of as gangrene which is very rare.

A much more frequent when it ends fatally is effusion of blood and serum into the bronchia and cellular texture of the lungs producing suffocation.

Treatment. The first step in the treatment consists in copious bloodletting. This is the most powerful means we have of reducing the excitement equalising the circulation and preparing the system for other remadies.

By drawing of a sufficiency of the circulating fluid we prevent many ill consequences ~~too~~ too

frequently the result of a protracted pneumonia.
Besides all these advantages it relieves immediately the violent pain which the patient suffers, relaxes the surface of the body, promotes expectoration and the operation of sweating medicines, the advantages of which you cannot always profit by unless preceeded by bleeding. Some writers talk much about the cautious use of the lancet in this disease, they tell us that we should be governed by the age constitution and condition of the patient, that the quantity necessary to be taken from one man would sink another D.P. Now the fact of the business is that although we admit in part the correctness of this reasoning we say that as a general rule the pulse is the only criterion by which we are to be governed; every body knows that an old man will not bear the loss of as much blood as a young

ne, neither is as much required for the very reason that he does not so rapidly redeem it. So long as the pulse is hard and the pain and difficulty of breathing continues we must bleed.

The blood should be drawn from a large orifice in order that a dicided impression be made at once. The physician should keep his fingers upon the pulse and not be satisfied untill it is reduced below the natural standard. If it be the first or second bleeding and the pulse very high and bounding he should carry it to the extent of inducing sickness or fainting, for in this disease as in all inflammatory cases the pulse will rise and become more irresistable unless you at once adopt decisive measures. Generally two such attacks with the lancet will be sufficient to bring the

ase under the controul of milder measures and as
hneumonia is sometimes cured by expectorants and
diaphoretics we shall proceed to some remarks
about them. And first of Digitalis. This
article has been employed by Dr Barton and
thers with a view to its expectorant and seda-
tive effects. We should certainly not expect
much advantage from it as an expectorant
it has not we believe answered the purpose
of physicians generally, besides the theory
f its operation is perhaps more obscure
han that of any other article of the class.
As to its power of controuling the action of
the arterial system I've know nothing, never
aving it used the difficulty however of
egulating the dose and the admitted supe-
riority of other means are sufficient reasons
or abandoning its use. The best expectorant
ndoubtedly is antimony. This may be given

combination with nitre in the dose of a
quarter of a grain of the former with eight or
ten of the latter every two hours or so. Antimony
is said by some to be beneficial by its sedatives
qualities independant of its neauseating effects.
That this artical acts directly as a sedative
is a new idea, it may be correct, though
we believe we have seen it injurious in
high inflammatory fevers where its appli:
cation had not been premised by bleeding.
If in the advanced stage of the disease
there is still pain with a difficulty of ~~breath~~
restoration and a weak pulse, one or two grains of
Camphor added to each of the above powders
will be of great service, especially if aided
by the action of a blister. After sufficiently
reducing vascular action some gentlemen are
in the habit of giving antimony alone in tepid
water so as to produce copious diaphoresis

if not to obtain some emetic effect. This is said
to be an excellent practice though perhaps alter-
nate doses of nitre would be an improvement.
In the low stage of pneumonia hinted at in
the preceding sentance Dr Potter states that there
a diminished susceptability in the nerves of
e lungs and bronchia and recommends mercury
though he says that squills, seneka and the balsam
ave been given with great benefit. The Eupato-
rium Perfoliatum has proved highly serviceable
in this typhoid condition of the system. So
lso is the Asclepias Tuberosa, given as Dr
Thacher recommends in the form of a strong infusion
That physician states that it possesses "the peculi-
and almost specific quality of acting on the organs
of respiration, powerfully promoting the suppressed expectoration and thereby relieving the
breathing of pleuritic patients in the most
advanced stage of the disease". Inhalations are
said to be good in pulmonic affections the

tam of hot water, vinegar and of the decoctions of Chamo-
le flowers are mostly used in pneumonia after the
rdance of the inflammatory action has abated. While
e patient is under the use of these medacines he should
rink freely of flaxseed tea, barley water and solutions
Gum Arabac. In the last stage of the disease
hen the cough continues with but little pain
nd no fever, a mixture of Gum Arabac. Tinct Opii
nd liquorice in warm water is a very admirable
reperation. The temperature of the patients room
hould be carefully regulated. Dr Cullen says
t should never exceed 60 degrees of Fahrenheit's
thermometer. His diet must also be attended to. It
hould be of the lightest and most digestible
ind, His drinks should be asidulated and
oderately warm, and finally the whole of the
ntiphlogistic reginen ought to be rigirously
nforced. We now come to speak of blisters in

is disease. They are in a few cases unnecsary though
uch oftener indispensable, particularly when the
atient is much weakened by morbid action before the
hysician sees him, in which case it is not always
ossible to draw a sufficiency of blood to supercede
heir use. They should never be applied when there
is much action, but after two or three bleedings they
nswer every indication. A fine large one should
be applied immediately over the seat of the pain
nd suffered to remain on twelve hours. By
the proper use of blisters we frequently prevent
hronic coughs and other dangerous affections of
the thoracic viscera. We shall now conclude
ith a few remarks on the use of Cathartics.
Almost all writers agree that medicines of this discription
ill not answer in thoracic affections. The utility of keeping
e bowels regularly open with cooling laxatives is agreed
hon by all. Perhaps they might be carried to a
reater extent. We think we have seen purging
retty fully induced in the first stage of the disease

th manifest advantage, the expectoration was very little
any diminished. But the truth is, in this stage of
e disease the expectoration is always is ~~always~~
earing whither you use purgatives or not. As we
now of nothing to which we can refer this circumstan
ess it be excess of action, why not use this most pow
rful auxiliary to bloodletting untill we have suffi
iently lowered the tone of the pulse to trust the
ure to other means? However we are not very
inacious upon the subject, we merely propose the
uestion, with a hope that we shall some day or
ther be better able to judge after a more extensive
xamination of that best of all books Experience.

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To

Doctor W. H. Glendinen.

This Dissertation, is

respectfully inscribed;

By one, who,

Has had the Honor,

of being a pupil,

To so kind and grateful a

Preceptor.

March 20th 1828.—

A Dissertation on the Atmosphere

Since the days of the alchemists it is well known that the science of Chemistry has been considered in a new light, and as subservient to very valuable and usefull purposes to mankind in general. The minds of the learned and scientific struck with the beauty and importance of its resources entered into the field of research with unmitigated ardour; and the present improved state of the science tell us what they realized.

In the period between the years 1772. 1787 a new mine of experimental research which promised the most curious and interesting results had been opened at first by the genius of Dr. Black and already pursued with much sagacity and industry by Dr. Priestly. But it was Lavoisier of France one of the most celebrated chemical philosophers of his time; a man whose views were far above any pecuniary consideration, who succeeded the former gentlemen in their particular views, and who devoted the last days of his life in experimental research that shed the most importance on the branch of Chemistry; of which we are about

to make some brief remarks. We allude now to the discovery of the properties of certain aëriform substances, gases, or (as they have been called) factitious airs. They are bodies which Chemists have called elementary or bodies which are not in the present state of Chemical science considered as compound. They are bodies which have never been insulated they have been found only in combination with other bodies; and which has hitherto escaped the attention of Chemical inquirers.

After having said thus much as a desultory introduction to the after part of our dissertion; we will remark that it is our purpose to make some general observations on the atmosphere or the common air which surrounds our globe. As it would be very proper we think and for the better understanding of the subject we shall procede analytically; and first with

Oxygen.

This elementary body forty or fifty years ago was unknown to the scientific world; it fortunately happened however to Dr. Priestley in the year 1774, when going through the experiment of heating the red powder which was called the precipitate per se, but now more properly called by the name of the red oxide of mercury) in a glass vessel; a quantity of air was driven off from the powder while the mer-

-cury assumed its metallic form; he collected this air in a convenient vessel and examined it; he found it possessed of certain properties different from the atmosphere and in one respect he said it was much purer than the common air; he called it from the theory of the time dephlogisticated air.

Scheele a Swedish chemist shortly afterwards discovered this same gas without any previous knowledge of Priestly's discovery; he called it empyreal air; it was also called Vital Air by some. Soon after this Dr. Priestly communicated his experiment to M. Lavoisier who with great ardour investigated the truth of Priestly's experiments; and from his investigations and observations are we indebted for the explanation of various phenomena: Lavoisier shewed that the mercurial precipitate per se, by being heated in a retort, and the retort being adapted to the pneumatic trough the beak of which terminated under a glass bottle filled with water; that an air passed over from the retort into the glass bottle, which was rendered evident by the displacement of the water in the vessel; and also a very important change had been effected in the red powder, which had previously been noticed by Priestly which was that it had resumed its metallic lustre and brilliancy and consequently was no longer a red powder but in fact running mercury. But the mer-

-der did not end here; the ingenuity and curiosity of the able Chemist led him to examine the air which he had collected: he did so, and found that it was an air highly respirable and supporting combustion in an eminent degree; for he putting a lighted candle or any other burning body in a jar of the air it burnt with increased brilliancy and force. He called it Oxygen gas: Oxygen in combination with the matter of heat or Calorick, for we do not speak of the gas in the abstract but in combination with a principle for which it has a great tendency to combine and to pass into a gaseous state.

This gas can procured in a variety of different ways and from a variety of substances. 1. From the black oxide of Manganese heated to ignition in an iron retort; or by mixing the same powder with twice its weight of Sulphuric acid in a glass retort and applying the heat of a lamp: very pure Oxygen gas can be procured in this manner. 2. It can be obtained from Saltpetre; by putting a quantity of this salt in a coated glass retort and applying a red heat Oxygen gas is formed. But there are two objections to this mode of preparation: for first the substance which remains in the retort can never without a great deal of trouble be got out,

one another circumstance is if you are not very carefull in pushing the operation at the end to obtain the greatest portion of gas, another substance will come over so as to render the gas so produced very impure. A great quantity of the gas is generated in this way for it is said one ounce of salt yields 1200 cubic inches of gas.

3. It may also be procured from the Oxy-muriate of Potash a salt that yields it in great abundance; by heating it in a small glass retort over an argandite lamp. The gas obtained in this manner is much purer than that produced by any other process. These are the principle substances from which Oxygen gas is obtained: but it can be obtained in a variety of other ways which it is not necessary to mention at this time. It should be observed that very oxygen gas is generated by immersing some green vegetables (such as the leaves of mint) in a vessel of water covered and exposed to the rays of the sun; in a short time small bubbles will have collected over the surfaces of the leaves and subsequently rise through the water to the surface. —

The gas when produced by any of the above processes is inodorous, colourless and therefore transparent like the atmosphere; it is heavier than the atmosphere according to Sir H. Davy 100 cubic inches at 60° Farenheit weigh 34 grs.

All combustibles burn in Oxygen gas with greatly

increase of splendour or in other words it is eminently a supporter of Combustion.

It was once supposed that Oxygen gas alone was necessary to combustion; but it has since been found out that other bodies beside Oxygen gas have an equal right to be considered as supporters of combustion. 361

Oxygen gas is very necessary for the support of animal life; without the use of this gas every breathing creature would cease to exist.

This gas when respired produces all the effects of a powerfull stimulant; it at first increases the strength and vigour of the body producing a degree of burning heat in the lungs; after continueing to respire it for a long time the stimulus of the gas is more than the animal body can bear; Vertigo, Coma, Convulsions and death eventually would be the consequence no doubt from the long continued respiration of this gas; yet it is a fact well known that a mouse, bird, or other other small animal will live four or five times longer in a vessel of Oxygen gas than in one filled with atmospheric air of the same dimentions.

But a circumstance of great moment and one of the highest importance to us, is the relation which this gas bears to the function of respiration; for the perfect performance of which it seems necessary that Oxygen gas should be inhaled into the lungs there to effect

a very important change in the dark coloured venous blood so as to render it fit for the usefullness of the animal economy.

It appears that Dr. Priestly was the first of the modern chemists who turned his attention to respiration and he concluded from his experiments that the blood as it passed through the lungs gave out phlogiston to the air which was expired loaded with that substance (and of consequence that the purpose of respiration was to free the blood of phlogiston.

According to Lavoisier the blood absorbs no air in the lungs but it gives out hydrogen and carbon which combining with the oxygen of the air inspired form water and carbonic acid. Now there has been an objection to this hypothesis of Lavoisiers in as much as the quantity of carbonic acid formed is exactly equal to the bulk of the oxygen which disappears; therefore this oxygen must be changed into carbonic acid in the lungs for it is known that oxygen when changed into carbonic acid does not sensibly alter its bulk. From this it has been concluded by Dr. Thompson that the blood must emit carbon and that to an extent of about 3/4 ths. of a pound in a day: this he considers is all that happens in the lungs; the watery vapour he allows is secreted from the blood to mix with the air expired;

but probably the secretion takes place in appropriate organs. Then by the loss of Carbon Venous is changed into arterial blood.

Our distinguished professor of Chemistry Dr. De Butts with his usual ingenuity accounts for the phenomena in a different way. From the doctors view of the function of digestion &c; he concludes that the colour of venous blood is owing to a portion of the Carburet of iron and as it has been proved that the colour of arterial blood is dependent on a portion of the phosphate of iron it is reasonable to suppose that the object of respiration is to change venous into arterial blood for that purpose is the blood carried to the lungs from the right side of the heart loaded with Carburet of iron and also having in connection with it a quantity of free phosphoric acid: when this blood then arrives in the lungs it is exposed to the contact and action of atmospheric Oxygen the moment the Oxygen comes in contact with the venous blood it combines with the carbon which is expired in the state of carbonic acid; the liberated air then finding free phosphoric acid (which is always found in Venous blood) combines with it and in that state passes with the other ingredients constituting arterial blood into the left side of the heart.

Oxygen in combination with the metals form a class of substances called Oxides. Carbon, Sulphur Phosphorous &c combine with Ox-

-ygen so as to form a very interesting class of substances called acids; some of the metals are capable of combining with a very great proportion of Oxygen and thus forming not only oxides but acids. From these circumstances the French Chemists considered Oxygen as the only acidifying principle this is not the fact for in the progress of the science it has been found that there are other principles that are the cause of acidity in some cases without the interference of Oxygen at all.

Oxygen is an essential constituent of atmospheric air, of waters, of saline and earthy bodies; it is also a principle of animal and vegetable matter. From all this it would appear that the relations of this principle are more numerous than any other body known.-

Nitrogen.

This gas had been considered as an elementary gaseous body until the time of Berzelius who with many experiments and theoretical reasonings endeavoured to prove that it was a compound body composed of Oxygen and an unknown base for which he proposed the name of Nitricum. This base however is considered by some and perhaps with great propriety as purely hypothetical and as it never

has been produced in an insulated state Chemists cannot at present know any thing of its properties. A series of experiments to prove that nitrogen was a compound body had been got up by Mr. Niers of London who precisely agreed with Berzelius in his views of the subject. Sir H. Davy's attention was next directed to the subject on the presumption that nitrogen was an oxide; which however was not attended with any better success than those of the former gentlemen. The general statement of the inquirers therefore have been found to lend no strength to the supposition that nitrogen like oxygen is any more than a simple elementary body according to the present state of chemical knowledge.

Nitrogen is said to have been discovered by Dr. Rutherford in the year 1772. It was found that after separating all the oxygen of any quantity of the atmosphere that there remained a gas which possessed peculiar properties and differed from oxygen gas or any other kind of gas which had hitherto been discovered. It was discovered that when a small animal was inclosed in a glass vessel containing common atmospheric air and the vessel being stopped tight; that after a certain period the animal would die. and inverting the mouth of the vessel into water and then taking out the stopper; that the water would rise and occupy a certain portion of the vessel: the air that remained was examined; and it was found to be a gas

unfit for respiration or combustion: it was also found that fixed air was formed in this case. Now it is not to be supposed that all the air which was left was fixed air on the contrary there was comparatively but a very small quantity; for on separating the whole of the fixed air by lime-water it was found that just 1/5 th. of the certain portion of air had disappeared and that the remainder 4/5 ths. was that air which we have just mentioned as unfit for respiration or combustion: it was called azotic gas, azote: a name given it by Lavoisier from the circumstance of its not supporting animal life.

Now it is well known that there are various gases which are unfit for the support of animal life beside this one; for this reason the name Azote was dropped and the term Nitrogen has been substituted from the circumstance of its having been found to exist in a number of nitrous preparations.

Nitrogen gas may be procured though not absolutely pure yet sufficiently so for the purpose of exhibiting its general properties in either of the following manners.

1. Mix equal weights of iron filings and sulphur into a paste with water and place the mixture in proper repose over water supported on a stand; then invert over it a jar full of common air and allow this to stand exposed to the mixture for a

day or two. The air contained in the jar will gradually diminish as will appear from the ascent of the water within the jar till at last only about 4/5ths. of its original bulk will remain. The vessel containing the iron and sulphur must next be removed by withdrawing it through the water, and the remaining air may be made the subject of experiment. 2. By burning phosphorous in a glass jar containing common air the phosphorous will combine with the oxygen (and) form phosphoric acid which will fill the jar with dense white fumes, after a short time these fumes will be condensed and the remaining air will be tolerably pure nitrogen gas. 3. Nitrogen gas can also be procured from the lean part of flesh meat; put into a glass retort the lean of beef cut into small pieces and pour on it very dilute nitric acid then connect the retort with the pneumatic tub and apply a heat of 100°. gas will be disengaged and is collected in the gas bottle. This gas as well as oxygen is not absorbed or not in any very appreciable quantity by water. It is lighter than the atmosphere 100 cubic inches according to Sir H. Davy at 60° Farenheit weigh 29.37 grains. Consequently it is also lighter than oxygen gas. It is not a supporter of animal life; for, it immediately proves fatal to animals that are confined in it. It is also a non supporter of combustion for it immediately extinguishes all burning bodies when they are

immersed in a jar containing it.

Nitrogen is susceptible of combination with various bodies and the compounds possess in many instances remarkable properties.

In the proportions of four parts of nitrogen with one of oxygen it composes a mixture resembling the atmosphere in all its properties: for it can be respired with safety for any length of time by an animal and burning bodies burn in it as in the atmosphere.

In combination with different proportions of oxygen it forms nitrous and nitric acids. It is also essential to animal matter; from the putrefactive decomposition of animal matters nitrogen and another elementary principle hydrogen are evolved; they combine and form the Volatile Alkali or ammonia. Nitrogen in combination with Carbon forms a carburet of nitrogen or Cyanogen which compound is the base of the Hydro Cyanic acid (Cyanogen in combination with hydrogen) or Prussic acid as it is still called which is well known as one of the most virulent of the vegetable poisons. Although nitrogen is a necessary constituent of animal matter yet it appears to form a very small ingredient indeed as an ultimate principle of vegetable matter. From this it appears that nitrogen bears great relations to other

bodies and is little inferior to oxygen in point of importance in the great theatre of scientific pursuit.

The Atmosphere.

It appears then from the facts stated in the preceding pages that the atmosphere is a compound or mixture of two different gases.

It is to Dr. Scheele that we are indebted for the fact that the atmosphere is a compound: for it is well known that to his time it was considered as an elementary body: Fire, air, earth and water being considered as four elements. Yet it has come to pass even before the present day that those bodies that ~~then~~ were once considered as elementary have been ranked as compound bodies and on the contrary those that were once considered as compound bodies are now placed among the simple elementary bodies.

This celebrated and illustrious Chemist Dr. Scheele in the course of some experiments after he had found out oxygen gas had reason to infer that the atmosphere was not a simple body. He took a glass bottle & with the bottom from it and he placed it on the shelf of the pneumatic tub and in this glass vessel he placed a small quantity

of the substance called sulphuret of potash; it was supported on a stand above the surface of the water of the trough in the Vessel. After letting it remain in this situation for a time he found that a portion of the air in the vessel was taken away & for the water in the pneumatic tube had raised to a certain height in the Vessel. He after this took out the sulphuret of potash and examined it he found that it was no longer a sulphuret of potash but a sulphate of potash: potash containing sulphuric acid. Dr. Scheele found in this experiment that just 1/5th. of the air which was originally contained in the Vessel had disappeared and the remainder was no longer fit for respiration or Combustibles.

The analysis of the atmosphere was most satisfactorily demonstrated by Lavoisier by the following experiment as explained in his Elements of Chemistry more enlarged. He took a glass vessel shaped like a matrass placed in it a small quantity of quicksilver and connected the superior part of the vessel with a right angular tube the one end of which being connected with the matrass and the other end with a gas bottle which was placed on the shelf of the pneumatic tub

He took care that the whole apparatus should be air tight and nice adjusted in its place.

He then had a portion of mercury in the matrass and all the parts ~~occupied~~ of the apparatus except that occupied by the small portion of mercury was necessarily filled with the atmosphere & an argand lamp was placed under the vessel containing the mercury and after keeping up a gentle heat for about 12 days he found that the mercury had suffered a considerable change, a part of it was no longer a shining fluid metal but was changed into a red powder; and also the water of the pneumatic tub had rose in the glass bottle and occupied a certain height in it. Lavoisier then examined the air which remained in the apparatus after the experiment and found that it was unfit for respiration or combustion. He next collected the red powder which was in the matrass and distilled it in a retort by which operation the mercury was regenerated it appeared in fact in its original metallic state and an air was given out which being collected in a glass bottle and examined he found that it indicated the usual phenomena of supporting combustion respiration, &c; and that it was the same gas which Dr Priestly had discovered, viz; oxygen gas.

These results then afford the

most satisfactory evidence that the atmosphere is composed of two distinct fluids. The one is capable of giving its base to mercury, and when separate is eminently adapted to the support of animal life and combustion; the other has no affinity for mercury and does not possess the other important qualities.

The object then of Lavoisier was to calculate the proportions which these two gases bore to each other: it was very easy to measure them and accordingly he did so. His report was that the atmosphere was composed of 1/4th. oxygen gas and the other 3/4 ths. of mephitic air. — But it appears that Lavoisier was not altogether correct in his calculations for according to the experiments of the best Chemists the atmosphere is now found to be composed of 1/5 th. of oxygen gas or 21 parts in the hundred and the remainder 4/5 ths. or 79 parts in the hundred is azote or nitrogen gas as it is more properly called.

It would seem then that oxygen gas is the only ingredient on which the chemical effects of the atmosphere depend. Hence combustible bodies burn in the atmosphere only in consequence of the oxygen it contains and it is only adequate to support animal life from the same circumstance.

But as it has been before observed oxygen gas is not fit of itself for respira-

-tion and for this purpose is the negative principle nitrogen gas added to moderate the powerfull effects of the oxygen gas or to dilute it as it were. —

The atmosphere (from αηρ, air and σφαιρα a globe) or the Common air as it is emphatically called is well known to be that diaphanous inodorous fluid which surrounds our globe. It is inferred to extend to the distance of 40 or 45 miles in height at the level of the ocean it is capable to sustain a column of water 35 feet high or one of mercury of the height of 30 inches and it presses with the weight of about 15 ~~inches~~ pounds on every square inch of surface. As we ascend the atmosphere decreases in density in geometrical proportion to equal altitudes.

The weight of the atmosphere was ascertained with great care by Mr. Brande from a number of experiments at the Royal Institution he found that 100 cubic inches of air at a mean temperature and pressure of the ~~thermometer~~ and barometer to weigh only 30.199 grs. The atmosphere acts a very important part in equallizing temperature; the great body of air is always in constant motion; over the torrid zones it is expanded by the concentrated rays of the sun; it being expanded its specific gravity would be lessened and consequently it would rise to the superior regions and flow over towards the poles; while the air from the temperate and frigid zones would press forward to fill up

the vacuum. This process still going on and the heated portions coming in contact with colder portions and with various parts of the earths surface which may be hotter or colder is supposed to occasion the various currents of air which we meet with on the earths surface. In this manner also are the different currents at the surface and at various depths of the Ocean accounted for: the water of the other parts of the globe mixing with the tropical water. Thus we find a beautifull provision of nature for supporting a uniform temperature. The atmosphere then possesses all those properties which are eminently suited for the comfort and convenience of creation; a deprivation of this fluid would annihilate all nature; all the vegetable and animal creation would cease to exist; the sun would cease to send her cheerfull and invigorating rays on earth; the moon would be blotted from the sight; all nature would pass into darkness and Chaos would regain its pristine domain.

The air is accused as the cause of numerous diseases; and it really is so. Sudden cold checking the perspiration will apparently produce almost every form of pyrexia. Partial cold will produce Rheumatism, Pneumonia &c; Damp air, Catarrh. The continued heat of Summer occasion bilious disorders and

the cold of winter a return of more active inflammation.

The pure air we breath is often charged with bodies foreign to our comfort and health. We allude to the infinite variety of adventitious bodies which are found floating or mixed as it were with the atmosphere. Every reading man knows whether high or low wet or dry the atmosphere is always in connection with various substances the principle of which are these and they are the only ones that we shall notice in this place.
1. Carbonic acid. 2. Watery Vapour.
3. Principle of Infection; which last has occupied the attention of men for a long time and we shall endeavour to give it some share of our attention.

Carbonic Acid, is at all times present in the atmosphere and is estimated by Mr. Dalton not to exceed one thousandth of its bulk. By Van Helmont it was called, gas sylvestre from being produced in vast quantities from burning Charcoal; From its apparent acid properties, aërial acid; and Carbonic acid and fixed air as readily losing its elasticity and fixing itself in many bodies. It is an invisible and permanently elastic fluid; superior in gravity to the common air and most other aërial fluids.
It consists of twenty eight parts of

carbon and seventy-two of oxygen and undoubtedly with some caloric. It is unfit for respiration; easily absorbed by water exceedingly destructive to animal life and produced in great quantities naturally from combustible bodies and many Chemical processes. It is found at the bottom of pits and caverns; near Naples there exists the famous Grotto del Cane which is constantly filled with it; it arises from fermenting liquors. It is heavier than the atmosphere 100 cubic inches according to Sir H. Davy at 60° Farenheit weigh 47.11 grains. This gas is powerfully antiseptic destroying the putrefactive decomposition. When introduced into the stomach it is agreeable and grateful and is administered with advantage in some disorders: but though it may be introduced into the stomach and intestines with good effect if breathed into the lungs it is mortal. By the respirations of animals comparatively a large quantity of Carbonic acid is formed: this results from the union of the oxygen of the atmosphere with the carbone of the venous blood.

Plants absorb carbonic acid gas and restore in their turn pure oxygen which combining with azote may imperceptibly to our senses renovate the atmosphere. Thus nature very completely restores the various changes in the com-

-stitution of our atmosphere which the dif-
-ferent processes constantly going on may
in her regular course have occasioned.

Watery Vapour. That watery Vapour exists
in the atmosphere sometimes requires not the
mind of a philosopher to prove. Every
man of reason knows very well that the
atmosphere very often contains water in
a state of Vapour — Now it has been found
that the atmosphere contains watery Va-
-pour at all times, at all seasons even in
the coldest weather. It is well known that
beside water; Camphor, Volatile Salts &c if
placed exposed to the air will evaporate; &
even if we view ice exposed to the air still
a portion of it is lost by evaporation and
we are told that the Vapour produced in
this way is different from that produced
by boiling namely that it is not so elas-
-tic. This sort of evaporation is called spon-
-taneous in order to distinguish it from that
produced by more obvious sources of heat.

It is the opinion of Mr. Dalton that wa-
-ter existing in the atmosphere constitutes a
distinct and independent atmosphere of it-
-self: this opinion of Dalton's has been con-
-sidered by many and perhaps with truth
as very erroneous; for as Dr. Henry says it
is certainly more reasonable to suppose that
water whenever it exists as an elastic fluid
neither distinct from or mixed with others, is

maintained as such by me under the same cause viz. the Caloric which enters into it: and not by Chemical solution in any gas or mixture of gases. It is stated that the reason vapour is raiser is that its specific gravity is less than that of water. The explanation which is now generally received is that of Dr. Halley's.

He compares the case to a solution of salt in water considering the air as the water and the vapour as the salt he still further states in corroboration of his hypothesis that the collateral circumstances which favour solution are favourable to spontaneous evaporation; such as an increase of temperature, extent of surface, agitation, &c. After the philosophic world had received this explanation of Dr. Halley's a circumstance was remarked which threw over the whole. It was found by putting a cup of water in the plate of an air pump and exhausting all the air from the bell that evaporation would go on and to an extent greater in a given time than when placed in the open atmosphere the evaporation went on under the bell of the air pump until it was filled with vapour which put a stop to the farther evaporation of the fluid. This simple experiment then proves the inconsistency of Dr. Halley's supposition for in this case the collateral causes which he alludes to as assisting the evaporation in the open atmosphere could not have operated here and another thing

to be attended to was that in the experiment with the air pump the pressure of the atmosphere was taken off the surface of the water.

It is stated that vaporous effluvia exists in the atmosphere in the form of small particles which are vesicular or little hollow globes.

Different portions of vapour are found at different altitudes and in different latitudes of the earth; in the torrid zones it is most abundant; in the temperate less and in the frigid zones still less vapour is found in the atmosphere; the quantity is however governed very much by the season of the year &c.

In the torrid zones very little rain falls vegetation is supplied by the profuse dew which is formed in the night after the sun passes the horizon of these regions the same quantity of vapour is no longer kept suspended in atmosphere it consequently falls unobserved through the atmosphere to the ground in the form of dew and supplies the place of profuse rains which fall only in the temperate zones. In the northern part of the temperate and in the frigid zones the power of the sun not being strong enough to suspend the water in the form of vapour condenses it which descends to the surface of the earth through the atmosphere in the form of hail, frost, snow &c these are the products of varying nature produced by climate and change of season.

Principle of Infection. It was an object of great interest among the medical world in those days when the constitution of the atmosphere was first discovered to suppose that the cause of some peculiar diseases was owing to a too less quantity of oxygen in certain portions of the atmosphere; it was supposed that in high situations there was more oxygen than in low situations and especially in low marshy places there was a considerable less quantity of it. Now it was very natural for men to draw this inference yet like the fate of all hypotheses it has to fall when opposed by facts. The Chemists turned their attentions to this point and to prove wether the atmosphere suffers any deterioration in this respect they collected the air of marshy places; they took it from jails from prison ships; and from every infectious place and examined it and yet they found the very same principles in the very same quantity always they could detect no less of either the one or the other of the principles composing the atmosphere. A very celebrated Chemical philosopher Gay Lussac ascended to a very great height in a balloon and he took with him a glass jar filled with water; when he had arrived at a very great distance from the earths surface he emptied it and immediately cork'd

it light; he brought it down with him to his labor-
-atory; he first examined the air of his labor-
-atory that there might be no mistake and
found that it contained the usual proper-
-tions of the two ingredients; viz; Oxygen
and Nitrogen gases. He then examined
the air which was contained in the glass
jar and he found it to contain the usu-
-al quantities to a fraction of a the gases
which was in the air of his laboratory.

This then was proof enough to any
honest minded Man that the cause of
an infectious disease was not to be attrib-
-uted to a too great quantity of oxygen
in the atmosphere in any given place.

But when this hypothetical notion
had been put down by Chemical inves-
-tigations; some who wished to explain
the subject in a new way gave vent to their
imagination in bringing forth the ideal
agency of the existence of Inflammable-
-air; Hydrogen; in the atmosphere as the
cause of the pestilential disease Yellow
fever We not ~~fine~~ stop to refute this Opin-
-ion for it has been shown by Davy that
hydrogen cannot exist alone for any length
of time in the atmosphere without combining
with it; and if this be the case and its all
probability it is the case; it would soon be
diffused equally throughout the whole at-
-mosphere and thereby so diluted as to be

altogether innocuous.

It was the opinion of some that the existence of the nitrous acid vapour in the atmosphere was also the cause of the fatal and pestilential disease Yellow fever and it was furthermore supposed that the exhilerating gas of Davy had some connection in the cause of a pestilential disease; Yet from the experiments of Beddoes and Davy it cannot be supposed to exert any deliterious influence; on the contrary it has the effect of a cordial or invigorating remedy much less a depressing or debilitating effect.

A very ingenious physician of the South Dr. Shecut advances the doctrine that the infectious disease Yellow fever is dependent on the existence of an aerial fluid in the atmosphere in consequence of a derangement of the Electrical Equilibrium in the air. That when by the evacuation of lightening the Electrical Equilibrium is restored it is impossible for the gaseous poison or Yellow fever infection to exist in such a degree as to produce the epidemic Yellow fever. In support of his doctrine the author adduces a number of facts as derived from the medical history and annual meteorological observations for South Carolina. Like many

other disputed points in medical science authors for the most part speak doubtfully as to the precise nature of the infection which produces fevers of various degrees of malignancy; We allude now principally to that fever which has received the name of Yellow fever. - It is now settled by the majority of the learned of the medical world that the greatest quantity of this peculiar principle which has been denominated Marsh miasma arises from marshy grounds more or less impregnated with putrid exhalations from the decomposition of vegetable substances.

Its activity in producing fevers is promoted by all those circumstances as increase the putrefactive decomposition and promote the exhalation of it; such as heat and moisture. When marshy grounds are at particular seasons of the year covered with water this prevents the miasma from rising in any considerable quantity and of consequence the disease are fever and less violent. But when from the great evaporation occasioned by a hot and dry summer, the ground is uncovered leaving it in a swampy state then aquatic plants, trees, &c undergoing the vegetable decomposition, produce an exhalation which is highly

acliterious.

Although authors appear to agree that marsh miasma is the most general cause of the epidemic yellow fever and give the most undeniable proofs of its effects; yet we are not to conclude marshes to be the only scource of this miasma. For every place where there is vegetable matter combined with moisture and heat decomposition of the vegetable matter will necessarily take place and give rise to miasma which may be as prolific in producing its peculiar disease as that arising from a marsh.

From the preceeding short view of the nature and origin of miasma it will appear that with the concurrence or absence of particular circumstances tending to increase or diminish its noxious power it must in different times and places exist with various degrees of strength.

Sometimes it is scarcely capable without the conjunction of others causes of producing fever; whilst at other times it may be of so noxious a nature as to affect the most robust in a short time after it has been received; and we can frequently observe intermediate degrees of its malignancy both with regard to the power of the noxious effluvia and also to the force

of the system, from habit, to resist their effects.

The manner in which miasma effects our system so as to prove the cause of disease is not clearly ascertained although physicians of the present day believe that it is taken in by the saliva swallowed and then taken into the stomach or either by Respiration. Some are inclined to one opinion and some to the other. The first opinion that the infectious effluvia mixes with the saliva and afterwards gets into the stomach has been embraced by several physicians of great character and learning; and as a proof of this opinion they find by not swallowing their spittle when attending the diseased they are exempt from the disease;

This appears very plausible; but we never could in our mind be led to suppose that the first impression of the cause operated in this way; for in the very few instances that might be allegd in proof of this hypothesis it may be referred to peculiarity of constitution &c and not to that of the miasma mixing with the saliva and afterwards getting into the stomach and there fermenting with the contents of the primæ viæ and so causing an increased secretion of bile &c!

That of respiration is more plausible the miasma is taken into the lungs during the act of inspiration it is consequently

brought into contact with the sentient extremities of the nerves and there primarily produce its peculiar impression as a cause producing the disease. By this View of the subject we think the phenomena of the disease can be more rationally accounted for.

It would require Volumes to illustrate and examine the various points in dispute among medical men relative to this peculiar principle of infection as the cause of Yellow Fever we have said thus much on this part of the subject the rest we leave to those who have more time knowledge and experience;

Vale.

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On the Hydrocele of the Tunica Vaginalis Testis,

an Inaugural Dissertation,

submitted to

The Faculty of Physic

of the

University of Maryland.

by

John Berry,
of Nashville Tenessee,

for the

Degree of Doctor of Medecine,

March 1828.

The term Hydrocele applies to any watery tumour, but the subject of this essay is confined to that disease which is denominated the Hydrocele of the Tunica Vaginalis Testis.

This is a disease from which no period of life is exempt. Not only adults but young children are frequently affected with it, and infants are sometimes born with a congenital Hydrocele. The earliest account of this species of Hydrocele was drawn up by Mr Viguerie a surgeon at Toulous and communicated to the Academy of Surgeons at Paris. From numerous observations it is said to be much more frequent in Germany, than in England. It is likewise remarked that this species of hydrocele, is frequent and of long continuance in Jewish children.

The parts concerned in the Hydrocele of the Vaginal tunic, are the following. The common bag in which both the testis are enclosed, called the scrotum, which consists of epidermis, skin, and that loose cellular membrane called the dartos, to which may be added the expanded fibre of the cremaster muscle.

The proper coats of the testicle are the tunica

-albugenia, and tunica Vaginalis. The former of these immediately invests the vascular portion of the testis, and is that coat which covers them while within the cavity of the ~~peritoneum~~ abdomen, before they descend into the scrotum. The latter is spread ~~over the opposite side~~ on the said cavity and is a process of the peritoneum placed ready for the reception of the testicle, when it shall have passed down to its destined situation.

Between the vascular structure of the testicle and the tunica-albugenia there is no cavity, but the external surface of the gland is in every part adherent to, and connected ~~with~~ with, the internal one of the investing coat. The tunica Vaginalis forms a hollow cavity or bag which is unconnected at the superior anterior and lateral parts of the testicle, being at the same time firmly united to it posteriorly ~~part~~, in such a manner, that if the cavity of the tunica vaginalis was to be distended with air, such air would occupy or fill the loose and unconnected part, and produce a tumefaction not unlike hydrocele, while the testis would be found firmly attached to the hinder part of the distended cavity.

Mr Pott supposed that whatever tends to increase the secretion of fluid in to the cavity of that membrane beyond the due and necessary quantity, or to prevent its being taken up and carried off by the absorbent vessels, contributes to the production of this disease. Ruysh entertained the opinion that hydrocele might arise from a varicose state of the spermatic vein. Mr Hamsden conjectured, that it arose sometimes from an irritated state of the urethra.

This disease has been known to originate during an attack of rheumatism, Exposure to cold and the pressure of ill constructed trusses on the spermatic cord, have sometimes been alleged as the cause of this desease. It is also said to be of more frequent occurence among old men and persons who ride much on horse back.

Dropsy in general and this disease often arises from an increased secretion of the arteries, or a diminished action of the absorbents but dropsical swellings are

generally the result of an increased secretion from the arteries. The proofs are found in the increased vascularity of the membranous surface from which this secretion is poured out, as is seen upon injection of the parts post-Mortem, and also in the change which is found to be produced in membranes of similar structure after long continued dropsies; and in the quickness with which Hydrocele succeeds inflammation of the testis and tunica Vaginalis, Hydrocele is most commonly the result of a relaxation of the arteries from whose patulous mouths an inordinate effusion of fluid takes place. It more frequently arises from this cause than from inflammation. In Hydrocele the absorbent vessels of the spermatic cord, on the diseased side, are said to be very much larger than on the opposite and healthy side. It is sometimes though rarely consequent upon inflammation of the testicle, which subsiding leaves the tunica Vaginalis filled with water. It is generally a local disease but is sometimes connected with an universal hydropic diathesis

Symptoms and progress.

In general on its first appearance, the tumour is rather round, but as it increases it frequently assumes a pyriform figure, with its largest extremety downwards; sometimes it is hard, and almost incompressible, somuch so, that in some few instances it has been mistaken for an induration of the testicle; at other times it is soft and lax, so that both the testicle and fluid surrounding it are easily discoverable. It is perfectly indolent in it-self, though its weight sometimes produces a small degree of uneasiness in the back.

Mr Pott states the transparency of the tumour to be the most uncertain sign belonging to it; he says it is a circumstance which does not depend on the quantity colour or consistence of the fluid constituting the disease, somuch as on the uncertain thickness of the containing bag, and the common membrane of the scrotum.

According to Sir A Cooper, upon accurate examination of the swelling, it is found to be transparent. His directs is to examine the tumour in the following way. The room is first to be darkened, the patient must then hold a candle burning brightly close to the side of the scrotum; the surgeon must grasp the posterior part of the swelling so as to render its fore part as tense as possible and then look at the swelling from the side opposite to the candle; placing his eye

hand on the fore part of the scrotum he will immediately discover the transparency. The strong light of the sun falling on the part answers equally well in shewing its transparency.

The quality and consistance of the contained fluid is various It is thin, aqueous, sappy, vivid, limpid, yellow, greenish, brown, bloody, clear, or turbid. It has a distinct fluctuation which may be observed by placing the hand upon one side of the tumour and gently striking it upon the opposite side. When excessively distended it feels hard. The quantity of fluid varies in different cases; a hydrocele of ordinary size contains about eight or ten ounces, but instances are on record in which four and even six pints of water have been drawn off.

The progress of the disease is generally so slow that six or seven months often elapse before the tumour approaches the abdominal ring. This disease is more inconvenient on account of its size and weight, than painful or dangerous. When large and not supported in a bag truss it drags the spermatic cord and creates pain in the loins. It also interferes with every kind of labour in which the lower extremities are concerned, and prevents the individual from riding on horse-back. Among other characters of the case the corrugation of the scrotum disappears by the distention of the parts, and the manner in which the swelling draws the integuments from the penis prevents the full erection of that organ; a circumstance which

is frequently a source of great anxiety to the patient, who is apt to suppose his virility irrecoverably impaired. When the swelling is very large, the penis is completely retracted, and the urine dribbling over the front of the scrotum, is liable to bring on a good deal of inflammation and troublesome ulceration of the parts.

In the Hydrocele of children the testis occupys a lower situation than the same organ in the hydrocele of adult persons, and the swelling appears farther up towards the abdominal ring; however the testis is generally placed two thirds of the swelling downwards, and at the posterior part of the scrotum. Pressure at that part gives the sensation of squeezing the testis. It is a very moveable swelling and does not distend the part much in the course of the spermatic cord; it bends easily upon the abdomen and moves readily in all directions.

Diagnosis.

Hydrocele may be distinguished from Hernia by the occasional return of the herniab swelling into the abdomen, by the dilation of the hernia in coughing, and by hernia disconnecting from the abdomen. In sarcocele in which the testis is only diseased, the tumour is more heavy and flatter on the side than hydrocele, and more solid. Much pain is also produced by

syringing the testis, & the epididymis is often capable of being felt as a distinct tumour; the cord may be traced with facility. There is also great vascularity of the scrotum, and the general health is often impaired.

From Hæmatocele we may distinguish it by the greater weight of the former by the want of transparency by its obscure fluctuation, and particularly by its being usually the result of a blow upon the part.

From Cirsocele it may be distinguished by placing the patient in the recumbent posture in which situation by pressure on the distended veins the tumour may be made to disappear. From hydrocele of the cord by the latter disease extending sometimes above the ring; it is also globular when grasped and raised; it appears of a light blue colour is very transparent and extremely firm to the feel unattended with pain; it is merely an inconvenience to the patient from the impression it produces on his mind. Hydrocele may distinguished from Hernia humoralis by the Hernia involving the whole scrotum, by its being attended with much inflammation and generally resulting from gonorrhœa.

General Treatment.

In general when a hydrocele is left to itself in an adult subject, no cure can be effected by nature alone. In young-

=persons the cure is more easy, in children under six years of age
nature without any assistance sometimes disposes the complaint.
Sometimes the tumour bursts or is ruptured by external
violence, or from an accidental effort of the patient, Accidents
of this kind sometimes terminate in a radical cure.

Internal remedies have no effect in this disease, unless employed in a very early stage, in cases of young children cold affusions of water has been found useful. When this remedy is used it is recommended to be pour'd on the part out of a tea-pot four or five times a day. Active purging has in some instances effected a speedy cure of this disease however it is rarely found to be useful.

Palliative Treatment.

Hydrocele is not a painful disease. In many cases, the patient generally prefers submitting to the inconvenience it occasions for some time, rather than have recourse to any surgical operation. However its weight and size finally become so disagreeable that he is obliged to wear a bag-truss, a painful extension of the spermatic cord takes place

and the patient is very much annoyed by a troublesom excoriation caused by the friction of the tumour against the sides of the thighs Hence the greater number of patients are very anxious for relief.

All the anterior superior and lateral parts of the vaginal coat are loose and detached from the albugenia, but on its posterior part those two tunics make one, and consiguently the testicle is as it were affixed to the posterior part of the cavity of the sack in hydrocele. This being the state of the parts the operation ought always to be performed in that part of the tumour where the two coats are at the greatest distance from each other and where the fluid must be accumulated in the largest quantity.

The two instruments used for this operation are the common lancet and the trocar. For the purpose of discharging the fluid, the latter instrument is generally prefered, as the canula facilitates the escape of the water and prevents its diffusing itself in the cellular texture of the scrotum, when the hydrocele is small or the

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An

Inaugural Dissertation

On Tetanus

Submited to an examination

the Faculty of the University

of Maryland

for the degree of Doctor of Medicine

by Joseph N. Stuart

of Virginia

1828.

Tetanus as defined by all authors is a contraction of several of the muscles of greater or less violence and extent with tension and rigidity of the parts affected. Tetanus may be divided according to its severity into acute and chronic. The first is very dangerous, and generally mortal. Chronic tetanus is less dangerous and by reason of its more gradual progress and affords time for the employment of more numerous remedies.

Tetanus may from certain causes occur in every climate with which we are acquainted but it occurs most frequently in the warmest climates and generally in the warmest seasons of those climates. It affects all ages and complexions. The causes from whence it commonly proceeds are cold and moisture applied to the body while it is very warm, and especially the sudden vicissitudes of heat and cold, or by punctures lacerations or other ~~Contusion~~ lesions of nerves in any part of the body. Possibly there are many other causes of this dreadful disease; but they are neither distinctly known, nor accurately ascertained.

If the disease proceed from cold it most frequently comes on in a few days after its application; but if it arise from a puncture of a nerve the disease does not commonly come on for many days after the injury has happened, very often when there is neither pain or uneasiness in the part, and frequently when the wound has cicatrized. Sometimes this disease comes on suddenly to a very violent degree, but it approaches more generally very gradually to its most violent state.

In this case it comes on with a sense of stiffness in the back part of the neck, which gradually increas-

ng renders the motion of the head difficult and
tremely painful. As the rigidity of the neck comes on
nd increases there is commonly at the same time a sense
uneasiness felt about the root of the tongue, which by
degrees becomes a difficulty of swallowing, and at length
an entire interruption of it; when this pain arises all
he muscles of the neck and particularly those on the
back part of it are immediately affected with spasm,
pulling the head very strongly backwards. At the
same time the temporal and masseter muscles which
pon the first approach of the disease were affect-
ed with some rigidity are now affected with violent
pasm, and set the teeth so closely together that
ey admit not of the smallest opening. This is what
commonly has been called Locked-jaw, and often
is the principal part of the disease.
hen the disease has advanced thus far a pain at
the bottom of the sternum returns, and leaves
he patient very frequently; and with it the spasms
the muscles of the back part of the neck and lower
aw are renewed with great violence, and severe pain
s the disease proceeds a greater number of muscles
become affected with spasm. After those of the
eck, those along the whole spinal column are
ffected, bending the trunk of the body back-
wards; and this constitutes what has been called
opisthotonos. Both the extenson and flexor muscles
f the inferior extremities are commonly at the

same time affected, and keep the limbs rigidly extended; though the extensors of the head and neck are usually more strongly affected, yet the flexors & those muscles that pull down the lower jaw are often strongly affected with spasm at the same time. During the whole of this disease the abdominal muscles are violently affected with spasm, so that the belly is much retracted and feels very hard. When the disease has made some progress the flexors of the head and trunk are equally affected with the extensors, so as to keep the head and trunk straight and strongly extended, incapable of being moved in any way, to this state the term tetanus has been strictly applied. At this time the arms which were little affected before become rigidly extended; and the whole of the muscles belonging to them being affected with spasm, except those that move the fingers which often in the most violent stage of the disease retain some mobility. The tongue also retains its mobility for a long time; but at length it also becomes affected with spasms which attacking only some of its muscles, forces it sometimes between the teeth, by which it is much injured. At the height of the disease every organ of voluntary motion seems to be affected and among the rest the muscles of the face.

The forehead is wrinkled, the eyes are sometimes

distorted and immoveable in their sockets, the cheeks are drawn towards the ears, & the countenance is expressive of most violent agony. Under these universal spasms the patient does not long remain, for a convulsion soon terminates his existence. In this disease the spasms are every where attended with great pain. The utmost violence of spasm is however not constant, but after subsisting for a short time, the muscles admit of some relaxation, although not so much as can allow the action of their antagonists. This remission of contraction gives a short remission of pain, but neither is of long duration. These violent contractions & pains are removed from time to time, & often times without any evident exciting cause. Every attempt to speak, to move or to swallow, gives occasion to the renewal of the spasms over the whole body. The attacks of the disease are not always but generally attended with febrile action, at the commencement of the disease, the pulse is full & frequent, tense & strong. When the spasms are general and violent, the pulse is contracted, hurried and

irregular; and the respiration is affected in a like manner but during the remision both the pulse and respiration usually return to their natural standard.

Frequently the face is pale with a cold sweat upon it, and very often the extremities are cold with a cold sweat over the whole body. In this disease the head is seldom affected with delirium, or even confusion of thought, till the last stage - so that the patient is sensible of all the changes of this distressing disease his pain is unsupportable, he sees the desponding countenances of his attendants and feels as if his departure could not be arrested. In this disease the natural functions are not immediately affected. Vomiting sometimes appears early but it is not continued, the appetite commonly remains good nearly through the whole course of the disease, & the food taken seems to be well digested. The excretions are generally deranged. It is not certain whether costiveness is the effect of the disease or of the opium which is administered, probably the latter as it is used in large quantities. The urine is sometimes suppressed, or it is voided with difficulty and pain. This disease has commonly proved fatal as we are told by Dr Cullen

and fatality might might be considered as a natural consequence as long as the disease was badly treated but since a more proper method has been known and practised, the disease has not struck the patient or the physician with such terror as formerly, and many now are cured. Judging of the tendency of the disease in particular cases, we may remark, that when it arises from a laceration of the nerves it is commonly more violent, than when it is the effect of cold; that the disease which comes on suddenly and advances quickly to a violent degree is always more dangerous than that which is slower in its progress. This disease often proves fatal before the fifth day, and if the patient has passed this period, he may be supposed to be in greater safety and generally the longer it continues, the safer the disease and consequently the less do we fear the result. However it is to be remarked that many days after the fifth the disease continues to be dangerous; and when it is considerably abated, it is ready to recur again with its former danger. No evacuation or eruption has been known suddenly to check its career, and when it terminates favourably it always recedes gradually, and often a long time elapses before all its symptoms disappear entirely. When the disease is known to arise from the laceration

of a nerve in any part of the body, the first and most important step to be taken towards the cure, is by every means in our power to cut off that part from all communication with the sensorium either by cutting through the nerves in their course, or by destroying the affected parts to some distance. We have several instances of great benefit from early amputation of a wounded extremity when tetanic symptoms first appear. This however should not be done unless the injury from which the disease results be inflicted on some of the smaller members such as the fingers or toes; to amputate the thigh would be putting the patient to useless torture. Opium as taught by experience has often ~~proved a~~ proved a very effectual remedy when we attempt to cure the disease by medicine. The remedies have been divided into external and internal, when the disease arises from the injury of a nerve it will be necessary to cut down and divide it, or to apply stimulating remedies or warm emolient poultices, & at the same time to give Laudanum, under this treatment the disease will be frequently removed. Both the warm & cold bath have been strongly advocated, but the cannot be relied on alone. Caustic has been often used successfully in traumatic tetanus. Of the internal remedies opium is the best & should

never be forgotten in the treatment of tetanus and cannot be limited. it should be given as soon as you suspect that the disease is approaching. wine or brandy may be give in very large quantities. in this disease it is almost impossible to produce intoxication. The whole clas of antispasmodics have be used the oil of Amber is among the best & if used in larger quantity would more often prove successful it should be given in the dose of half a dram. When opium is administered it should be given in small & frequently repeated doses, at the intervals of 2 or 3 hours as the violence of the symptoms may require, it seldom induces ~~torpor & sleep~~ stupor or sleep which it does so often does under other circumstances when much smaller doses have been taken. therefore we should not be sparing in its use.

Purgatives have been administered & recommended by very respectable authority in this case - Dr Hamilton of Edinburg represents them as entitled to our confidence. But if they be useful it must be in cases of tetanus resulting from internal irritation, where the disease originates in the alimentary canal. In such cases probably emetics combined with purgatives might be useful, for besides assisting in the removal of irritation they would contribute by their nauseating quality to the relaxation of spasm. Blood letting has been practised with advantage in this disease in plethoric subjects, regard must be paid to the state of the system in this as in all other complaints. Blisters were formerly in this disease, but it is asserted that they were

constantly hurtful & are now never employed.

Mercury in its turn was tried, & report says with success; & is now one of the principal remedies in use. This, with opium & wine, appear to be the only remedies, upon which we can confidently rely, in the treatment of tetanus. Of these, the two latter retard the progress of the disease, preventing exhaustion, & death, from violence of the spasm, until the former has had time to eradicate it entirely, by converting the tetanic into the mercurial action. Opium & wine being palliative rather than curative remedies are not sufficient of themselves without mercury, while without their aid mercury is too slow in its operation to arrest the rapid march of the disease. The usual & best preventatives of tetanus from external injuries consist in the conversion of punctured into incised wounds by means of the scalpel & the excitement of suppuration in lacerated wounds.

These things if done immediately after the injuries have been received & before the occurrence of tetanic affections are of great importance but they are worse than trifling if delayed until the disease shall have made its appearance. When the tetanic diathesis is fairly formed all local applications to the injured part are unavailing even the amputation of a limb has been found insufficient to arrest its progress. Should circumstances exist to prevent the dilation of a punctured wound the application of caustic alkali & sinapisms to the part are the best substitutes. Whatever is calculated to excite common inflammation is useful at this time. For the production of suppurative action in lacerated wounds spirits of turpentine, or a solution of the muriate of mercury followed by poultices frequently repeated are the best applications. When from a neglect of preventative remedies, or in despite of their use tetanus has made its appearance, a different course of practise must be commenced and pursued diligently. To the state of the

system a strict and steady attention must be paid. If the patient be plethoric and the excitement run high, or if the latter, without the former blood must be drawn and the operation repeated as often as circumstances may require; if costiveness prevail & any irritation be suspected in the bowels purgatives are to be administered as in other diseases; but as has been mentioned above as soon as the condition of the system will admit them, wine opium & mercury are to be given according to their effects on the system without regard to quantity. They should be given until the system has forcibly felt their action or they will be unavailing. Opium should be administered in injection in doses of from five to ten grains & repeated at short intervals until the spasms are overcome and some soporific effect produced; applying in the mean time to various parts of the body quantities of mercurial ointment, when the power of swallowing has for a long time ceased, nutritive clysters should be substituted. After surgical operations, as a prophylactic salivation, & the use of the tincture of opium mixed with the dressings has been employed to prevent symptomatic tetanus with success.

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An

Inaugural Dissertation

on

Sclerus

Submitted to the examination

of

The provost

the Trustees and Medical Professors

of the

University of Maryland

For the degree of Doctor of Medicine

by

Edward McCeney of

Anne Arundel County Maryland

March 27th 1828

To

Samuel Baker M. D.

Professor of Materia Medica

in the

University of Maryland

Permit me Sir to dedicate this dipentation to you as a small tribute of gratitude and esteem for the polite attention and benefits derived from your instructions during the prosecution of my medical studies under your guidance they were always gratefully received and will ever be remembered by

your former pupil Edward McCeney

Essay on Icterus

Before intering upon the subject of Icterus I propose to make a few physiological remarks on the liver Considering the size of this organ in all animals that possess it and how generally it is possessed being common to all red blooded animals there can be no doubt that it is of great importance in the animal economy. Whether it serves to separate any excrementitious material from the blood or produce any other effect upon it has not yet been decided Certainly its most obvious office is the secretion of the bile which in most animals in its passage from the liver to its place of destination the duodenum communicates by means of a duct, with a pear shaped reservoir denominated the vesicula fellis or gall bladder in which it is suffered to accumulate And as ~~the~~ it ~~symptoms~~ is generally believed that the symptoms of Jaundice depend upon an obstruction to the free egress of the bile from the excretory ducts of the liver into the alvine canal and its return into the circulation Although such is the case in general yet there have been instances in which there were a copious absorption and

return of bile into the blood and at the same time a redundant flow of it into the alimentary canal How-ever the most general causes of Icterus may be referred to mechanical obstructions to the biliary ducts Many disputes have arisen concerning the manner in which the bile is received into the system but it is now generally believed that it is taken up by the absorbents of the gall bladder and ducts Hence it is that jaundice may be produced by any thing obstructing the passage of the bile into the duodenum Biliary concretions appear to be the most frequent cause of this disease With respect to their formation we are yet unacquainted The liver appears in many instances to be sound but in other cases it is undoubtedly diseased and from the morbid secretion it may become more disposed to chrystalize From the analysis of biliary concretions they appear to contain most of the ingredients of the bile From their peculiar chrystalized structure we are led to believe that something more is necessary to their formation than the mere inspissation of the bile but what that consists in physiologists have not yet been able to detect Sudolence of body & anxiety of mind appear

particularly to predispose to their formation therefore they are much more frequently found in women in the upper walks of life and men much addicted to sedentary occupations especially after the more active period of life Haller noticed the frequent occurance of biliary concretions among criminals whose deaths had been preceded by long confinement but the anxiety of mind also might contributed to their formation as long as biliary concretions remain undisturbed in the gall bladder for they are generally formed there they appear to produce little or no inconvenience but from violent compression or from irritation the gall bladder and ducts contract and thus the offending substance will gradually be moved in the direction where least resistance is offered this will of course be toward the mouth of the duct not solely because the duct gradually enlarges but because there is constantly an impulse given from the accumulated secretion from behind. When biliary concretions of large size are thrust into the ducts they produce the most excruciating pain to which the human fabric is liable and it is generally refered to the pit of the stomach

corresponding to the opening of the duct into the duodenum
and shooting from thence towards the spine accompanied
at intervals with rigors and nausea During the paroxysm
the respiration is hurried with great anxiety restlessness and
occasionally with delirium followed by extreme langour and
faintness with vomitting & occasionally with spasmodic
twitchings in different parts of the body Profuse sweats
often break out apparently from the severity of the pain
In the intervals of the paroxysms there is generally a
fullness and soreness in the epigastric and right hypo-
chondriac region The patient generally experiences
most relief when his body is bent forward The pa-
roxysm will continue to recur at intervals until the con-
cretion makes its escape into the alvine canal which
it will do in some instances within a few minutes in
others it will be for weeks in praping along the duct
thus obstructing the passage and producing the disease
which in some instances will continue for a considerable
time after the cause has ceased to act Biliary con-
cretions of such large size have sometimes passed
as to make physicians doubt whether they did not
make their way by ulceration into some part of the

intestinal canal which is highly probable as there
are cases where they have been known to make their
way through the walls of the abdomen

Preternatural viscidity of the bile has often been adduced as
a frequent cause of jaundice It appears that this state
of the bile may take place from a variety of causes
From the remora of the bile in the gall bladder and
ducts produced by particular positions of the body
from pregnancy and from vascular turgescence of the
liver itself and at the same time the absorbents of
the gall bladder and ducts still continuing to act
if not increased in action will take up the more
attenuate particles of the bile and thus render it
viscid Augmented secretion from the gall bladder
and ducts has also been assigned as a frequent
cause and also a too viscid consistence of the bile
in its secretion in the liver This species of jaun-
dice is most frequently met with in autumn
and it generally commences very insidiously There
is in this variety a diminution of appetite restless-
ness disturbed sleep and a disinclination to exertion
of any kind together with the general symptoms of Icterus

Inflammation appears to be a very frequent cause of Jaundice by preventing the free discharge of the bile probably by a thickening of the parietes of the ducts thus lessening their calibers It may take place from a variety of causes it may either extend from the intestines or from the liver itself from cold and especially from taking very large potations of cold water when the body is much heated The symptoms attending this species of obstruction are those attending general inflammation tenderness of the epigastrium and usually commences with a chill It has been questioned by some whether Jaundice is ever produced by mere spasm of the ducts themselves. The arguments in favour of this opinion are that it has been a frequent attendant on Hysteria and other spasmodic diseases and that the attack is sometimes very transitory and from dissections there has been discovered no mechanical obstructions whatsoever in the ducts and also without any appearance of biliary concretions in the feces It occurs more frequently in persons of very irritable habits from sudden emotions of the mind The passions have a remarkable effect on the secre

-tion of the bile and they may also cause a spasm of the ducts themselves The symptoms attending spasmodic constrictions of the ducts are sometimes as violent as when bilian concretions are impacted in the ducts The spasm indeed appears to be the cause of the pain in both cases. Enlargements of the neighbouring organs is not an unfrequent cause of this disease such as schirrhus of the pancreas scrophulous glands tubercli of the liver may occupy the parietes of the ducts as to prevent the discharge of the bile and thus produce the disease In this variety the pain is not so acute and does not come on suddenly general emaciation attended with soreness and hardness in the epigastric region Jaundice is also described to have been produced by mechanical distention of the duodenum by closing the valve of the duct Jaundice arising from this cause appears to be peculiar to infants and is very easy of removal It only requires the exhibition of some mild aperient medicine to clear the bowels of the impacted viscid meconium

Having spoken of the principal causes which

give rise to the disease I shall now enumerate some of the most characteristic symptoms Jaundice generally commences with a want of appetite a sense of lassitude and languor depression of spirits disinclination to exertion of any kind indigestion and general emaciation In some cases there is a great propensity to sleep in others wakefulness The dejections are pale or clay coloured with the absence of the foeculent smell As the disease increases the yellow colour makes its appearance showing itself first in the tunica albuginea The urine becomes high coloured with a yellowish sediment so as to be capable of imparting the same colour to linen The yellow colour appears not to be confined to the skin alone but is diffused over the whole body so that the bones have been found tinged yellow for a very long time after the disappearance of the disease There is generally great itching over the whole body The bile appears to be diffused in the whole mass of fluids so that the secretions are affected even the blood itself is said to possess a yellow colour.

Jaundice may arise from so many different causes some of which it is impossible to discover during the patients life and some which may be considered incurable we ought therefore to ascertain if possible the real nature of the cause which has given rise to the disease which can in general be done by attending to the various circumstances which present themselves for certainly such a discrimination must be of the greatest importance when it is considered that the mode of treatment must be varied according to the nature of the cause by which the disease is produced Whether the passage of the bile be obstructed by biliary concretions or spasmodic constrictions the plan of treatment to be adopted must be nearly the same In the passage of biliary concretions of very large size through the common duct they very frequently produce from their great distention not only very acute pain but also when long continued a considerable degree of inflammation to guard against which it will often be necessary in full plethoric habits to take away blood proportionable to the

state of the pulse and severity of the pain This should be succeeded by the use of the warm bath warm fomentations together with opiates The opiate should be given in the solid form for the stomach will often be so irritable as to reject liquids of every kind Two or three grains of opium should be given at first and if relief is not obtained in half an hour the same quantity should be repeated with the intention of facilitating the passage of biliary concretions or viscid bile emetics have been used with great advantage During the act of vomitting the diaphragm and abdominal muscles concurrantly contract and the whole of the abdominal viscera are thus forcibly prest upon which must necessarily cause the gall bladder and ducts to pour out their contents freely For this purpose the antimonial emetics are preferable because they are less apt to be rejected and also excite a much stronger stimulus After the operation of emetics the bowels should be freely opened by some purgative medicine Exercise has also been useful particularly

- by that of riding on horse back by the conception which it gives to the liver frictions and the like have been used with the same view Purgatives have been found very useful in some cases of Jaundice especially in those cases where the disease arises from a too viscid state of the bile in consequence of a torpid condition of the liver In this case mercury must be used to change the condition of the Liver In cases of infants where the passage is obstructed by viscid meconium purgative medicines must be principally relied upon The nitro-Muriatic acid bath hath been much recommended in cases of Scirrus It should consist of three ounces of diluted aqua regia to every gallon of water the strength of the bath should never be greater at any time for otherwise it may produce a very troublesome rash and give a yellow hue to whatever part is exposed to its action Dr Scott used it with decided advantage in almost all cases dependant on a morbid secretion of bile There has been a great variety of other remedies recommended in Scirrus such as the alkalies electricity the use of the common hemp &c but none of them much used at the present time

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An,

Inaugural, Essay

On the,

Causes of Sudden death,

And the means of preventing it,

Submitted to the examination,

Of the,

Medical Professors,

Of the,

University of Maryland,

For the degree of

Doctor of Medicine,

On the day of, 1828,

By Daca, Wilson,

Of Alabama,

On the,

Causes of Sudden death,

517

And the,

Means of preventing it,

Death is the inevitable lot of all mankind but there are few persons, whose business, or whose conduct in life, do not render it a greater evil to themselves and their families when it takes place suddenly than when it occurs after a previous indisposition. To point out the principal causes of the sudden and unsuspected extinction of life, and the means of preventing it shall be the subjects of the following dissertation. It will be necessary that I premise to adopt the opinion of the professors of the Institutes that life consists in such a peculiar organization of matter, as to be capable of producing by certain impressions, those motions and sensations which have been hypothetically ascribed, by some, writers to the mind and by others to an independent vital principle. Death of course consists in the distruction of that peculiar organization of matter, or an incapacity

with those impressions which produce the motions and
sensations of life. The causes which produce this in-
capacity in the matter of the human body, and
thereby induce sudden death, act more or less certainly,
according as they are more or less combined, according
to the nature of the parts of the body on which they
act, according as the system is in a state of healthy
excitement, or more or less predisposed to death, by
previous debility, or by a previous disease. They appear
to induce death by a sudden destruction of the excitement
of the system from the excessive force of impression or
the sudden abstraction of them, whereby the system is ren-
dered incapable of performing its natural offices.

I shall briefly enumerate the causes, which, by inducing
the above changes in the system, bring on sudden death.
Extreme heat and extreme cold. Both these act with most
certainty upon old and sickly people. Dr. Hasham rem-
arks, that old people are often found dead in their beds, after
an extreme cold or warm night; and their are few
physicians who have not had patients suddenly and unexpect-
edly snatched out of their hand by the extremes of heat and
cold. Fatal effects have likewise followed or rather ban observed
when heat and cold in their extremes, have followed each other

in a rapid succession. The rays of the sun acting upon the
head have often produced death, by means of what is called
by the french coup de soleil: and cold, combined with moisture,
has so often produced it in the form of Apoplexy, as in
some instances to create a belief that disease had assumed
the character of an epidemic. Sudden changes in the weight
of the atmosphere, some cases of kind are mentioned by
writers. Certain matters contained in the air. These are
several of the gases particularly Azote or according to modern
nomenclature nitrogen gas, the carbonic Acid, and inflamable
Air. The black at Calcutta will be a lasting monument
of the deadly effects of azote or respired Air. Many people
perish from sleeping in unventilated cabins and rooms, in
consequence of Carbonic Acid eliminated from burning
coals, and it is well known that miners are often destroyed by breathing the inflamable Air which is discharged
from subterranious caverns. Of the noxious airs some have
added certain vegetable poisons which are said to float
in the atmosphere: but since the rejection of the fable
of the East Indian upas tree, sudden death from this cause
has been discarded from medicine. The Air in the vicinity of the Rhus Radicans has been known to induce
fever and to inflame the skin, but I believe in no instance

has it. Suddenly extinguished the vital. To this head belongs the vital Miasmas which exist in the atmosphere from the putrefaction of Animal and vegetable substances. The history of the plague in the Old world, and of the yellow fever in the United States, furnish many proofs of sudden death from this cause. This is not the place to inquire whether those diseases or death can be induced by a matter secreted in a morbid body, and conveyed into a healthy one; sudden death has sometimes been brought on by entering a small and filthy room, crowded with persons ill with the plague. But the matter which induces it is not secreted. It is like the original Miasms, the offspring of putrefaction, and in these cases derived from stagnated excretions from the bodies of sick people. As I am only relating facts at present, I hope I shall be excused from deciding on the long agitated question of the part of the body, on which the Airs and Miasms, that have been mentioned, primarily and chiefly act in producing their deadly effects. Some of them certainly act upon the body, through the medium of the lungs; some of them upon the whole nervous System through the medium of the brain; And some of them upon the sanguiferous System through the medium of the stomach. It is possible, Miasms may convey death to the body through the avenues of all the parts that have

ben mentioned. I have said nothing of sudden death from contagious. They are extremly limited in their numbers and seldom so powerful, in their first impressions as to extinguish life. cases of sudden death from the Small pox, Measls and the hooping cough, are I believe rarely to be met with in the records of medicine. Lightning is often a cause of sudden death. It seems to act primarily upon the nervous system, but the blood and all the muscles of the body appear to partake of its forcible impression. Hence the quick putrid action of the body after death from this cause. Sudden and violent emotions of the mind. Anger has in instances produced death terror has often produced it. Soldiers has often ben found among the slain in battle whose bodies have ben found free from wounds. Their deaths have ben ascribed to the wind of cannon balls; Is it not probable they were occasioned by the violent impression of terror upon their systems: Trifling wounds if it is well known, have now and then produced death, from being combined with a sudden paroxysm of fear. The passions of fear and grief have occasionly induced sudden death, but it is more common for them to produce it by a previous chronic disease. Under this head we may bring in as a cause of

sudden death, a sudden sense of pain and shame. Of
this their are several instances to be met with in
practical authors. Great bodily exertion in labours lifting
weights and in marching, have sometimes suddenly dest
royed life. Fatigue or the reduction of excitement of the
system in marching more certainly induces sudden death,
if it be combined with excessive heat. The histories of the
late French and English campaigns in Egypt furnish a
number of instances of Soldiers expiring on the public
road, from the combined effects of the rays of the
sun, and great fatigue acting upon their bodies. Great
bodily pain has sometimes induced sudden death. The col
lic often kills by excessive pain. Mr Hunter relates an insta
nce of the pain occasioned by the extirpation of a disease
which producing death. In fevers sudden death is sometimes
brought on by the inability of the blood vessels to react
on the chilly fit; by convulsions; and by the extreme de
bility which follows the termination of a paroxysm
of severe affections of the head, from Gout and the
frequents causes of sudden death. The most common
of these are effusions of water or blood upon the brain
inducing apoplexy. Death is sometimes the effect of a
sudden effusion of blood or water in the lungs, constituting
what has been called by Dr Reid in his lectures the apoplexy
of the lungs. A Spasm of the heart, produced by the gout,
as in several instances, induced the sudden extinction
of life. Certain poisons and many substances of an in
digestible nature, also cold liquors, when the body is
unnaturally heated, received into the stomach by their
sympathy with the head, heart or blood vessels, induce
sudden death. It has sometimes followed a Spasm
in the stomach from gout, also a rupture of that im
portant viscus. The discharge of pus from the liver into
the thorax, and into the abdomen, has often hurried perso

suddenly out of life. Worms in the alimentary canal have now and then suddenly produced death, especially in children, by exciting apoplexy or general convulsions. The sudden rupture of an Anurism, in the large blood vessels near the heart, has often become an instantaneous outlet of human life. It has passed away with nearly equal rapidity from a rupture of the bladder and the uterus. It has been induced by syncope from partial and general causes. The sudden reduction of the excitement of the system, by Hemorages, by parturition by a large stool, by a copious discharge of matter, from an abscess and perhaps, by the cessation of pain, has in sundry instances brought on sudden death. Derangement producing suicide. I have ascribed this cause of sudden death to a disease, for such is its contrariety to the natural principles of action in man, that I believe it rarely takes place in the perfect exercise of his reason. I shall say nothing of the causes of sudden death from drown external causes wound, and accidents as being foreign to the subject, and briefly to mention the means of preventing it. I shall confine my self only to such cases as are within the power of medicine.

Art. 3rd To prevent death from the extremes of heat, cool ... drinks and situations should be advised. As it frequently occurs in the night, and during sleep, in ... weather, by recommending to old and weakly people ... constantly on a mattras, to prevent it from cold; warm but light bed cloths, should be prescribed; and as death makes its first ~~appearance~~ approaches through the feet, great pains, should be taken to keep them warm, by means of warm ... wrapped in warm flannels, or stone jugs filled with warm water. The fatal effects of the stroke of the sun ... to be prevented, by constant and gentle exercise, when ... are exposed to its rays, and by protecting the head by

an umbrella, or a duck crowned hat, covered with white
linnen or paper. The egyptians, says Mr Curwan, use a turban
for this purpose. It is true it accumulates the heat of the head
but this heat he remarks, is less, and far more tolerable, than
the heat of the sun, which in the climate of egypt, is
often between 129 and 139 degrees. Within these degrees of heat
says Dr Rush, I have seen the natives of Bengal rowing
their boats, on the river Hoogly exposed to a meridian sun
and bare headed, without experiencing any ill effects.
The only precaution they used, was to keep their heads constantly wet by pouring on them large gourds of water.
By this means the neck, shoulders, and chest which
with the head were exposed to the sun, were kept cool from the
evaporation of the water. During the prevalence of the winds
and that kind of weather which disposes to sudden
death from apoplexy, great care should be taken to oppose
the predisposition to it, by temperate diet and gently opening
physic. To prevent the fatal effects of the gases, that have
been mentioned, places which are supposed to contain them should
not be entered, until they have been examined by a lighted
candle. The extinction of its light, is a sign of its containing
foul or carbonic gas. A flame or explosion excited by the
flame of the candle, indicates the presence of inflamable
air. The deadly effects of the miasms from putrified vegetable
and animal substances, are to be prevented by avoiding the
places which generate them, by lessening the predisposition
to be affected by them, by means of abstinence gently oper-
ating physic, and a temporary issue, excited by a blister
on one of the legs, or limbs. Of the efficacy of these preven-
tives there are many proofs in the history of pestilential fevers
and diseases. The means of preventing or avoiding sudden
death from lightning, belong to naturals not to medical
philosophers. The principles of death from violent emotions

of the mind, should be sought for in those books which inculcate the subjection of all its faculties and operations to the dictates of reason and religion. Labour and exertion disproportioned to the strength of the body, should be carefully avoided by all who wish to avoid or escape a sudden dispatch out of the World. The combined influence of heat and fatigue upon life from labour and marching may be obviated by counter stimuli. Ardent spirits have generally been resorted to for this purpose, but a garlic or raw Onions are to be preferred to them. By the constant use of these cordial vegetables, the hebrew nation were enabled to sustain the labour of making bricks, in the open Air exposed to the intense heat of the climate of Egypt. The deadly effects of heat and fatigue were prevented in a part of the British army in the same country during the late war, by allowing the Soldiers, but a small quantity of Water. Similar advantages are derived from abstaining from water altogether, by the Indians of North America, during the day, in their long and fatiguing marches, in hot weather. Death from extreme pain may be prevented by bleeding. Opium, hunger and grief reduce its sensations by cries and groans. Of the efficacy of hunger in easing pain Dr Priestly relates the following: In travelling through germany, he passed through a village, where a criminal was exposed to torture once a week, in order to extort from him a confession of his accomplices in his crimes, three days before he suffered he avoided tasting any food. The sensation of hunger thus induced was so painful, and at the same time harmless in its effects upon life, as to be over balanced by the pain and danger of the tortures inflicted upon him. Unexpected death in the chilly fits of a fever, should be obviated by warm drinks; from excessive force of reaction in the blood

hels, by bleeding; from convulsions, by remedies suited to the stage
the disease in which they occur; and from the debility which
ollows a paroxysm of fever by cordial medicines, drinks and
liments. Sudden death in persons predisposed to it from apop
y should be obviated by temperance moderate exercise,
en bowels; not suppressing usual evacuations; nor changing usual
bits; by occasional bleedings when the premonitory signs of
tigo; and head ach take place; by avoiding tight ligatures
ound the neck, by sleeping with the head a little eliv
d, and upon a mattress instead of a feather bed
d by never sleeping upon the back, but alternately
on each side Dr Rush mentions several cases of palsy
does Dr Potter in his lectures, a disease produced by a
ore feeble operation of the causes which produce Apoplexy
Rush mentions that patients sleep upon their left side.
Sudden extinction of life by the Apoplexy of the lungs
Dr Rush would call it and considers appropriate and
itemate, by Dr Potter in his lectures, by poisonous and
digestible matters received into the stomach, by worms
the alimentary canal; and by spasm of the heart,
uld be prevented by the usual remedies for that purpose,
ntioned in the book of medicine.
den death from cold liquors, taken into the stomach when the
y is preternaturally heated, has been often prevented
plunging or rather conducting off the heat of the body
plunging the hand and fut into cold water, or by was
the mouth with it, or by grasping the vessel contain
the liquors provided it be made of a metal or
y kind of earth. 12th Persons predisposed to
ut; spasms in the stomach or heart, should
void the remote or exciting cause of Gout; but
hen attacked by it, should flie to Laudanum, untill
advice of a physician can be obtained.

when danger is apprehended of the sudden discharge of
pus from the liver into the thorax or abdomen, it should
if possible, be diverted externally, by means of a caustic
Pulse. which emulge the bile from the liver into the
stomach and bowels, would perhaps have the same effect,
for its purulent contents; the ducts which lead to the
duodenum would ~~perhaps~~ probably yield to the agitation excited
by a vomit, sooner than any other part of the
viscera. 16th Sudden death from aneurisms has often been
prevented by a temperate diet, tranquility of body
and mind, and by small and frequent blee-
dings. When sudden death is apprehended from
syncope, great pains should be taken to avoid
the remote and exciting causes, and to strengthen
the system by tonic remedies. The sudden extinction
of life from sudden depletion, or the sudden
collapse from distention, or expansion of pain,
should be obviated by vicarious stimuli of other
kinds; when they cannot be prevented by other
means. 16th When there is reason to apprehend
sudden death from suicide, persons suspected of
it should be narrowly watched, and all the
means of death should be removed from them.
Solitude should be prevented, and cheerful Society or
cheerful Glass, should be advised. The excitement of
strong emotion of terror and pity has prevented it
in numerous instances. 17th In cases of sudden death from
any of the causes which have been mentioned, it is
probable that resuscitation might be effected by the usual
means, when judiciously applied. In the use of them

shall only deliver the following directions: 1st Begin
with such as are of a gentle nature, and gradually
resort to such as are more powerful, in all cases where
the cessation of the functions of life has been induced
by causes which leave the excitability of the system
in an accumulated state. 2nd In cases when by great
exertions to preserve life, the excitability of the system
has been expended, let no stimulus be applied for some
time after the cessation of apparent life. By observing
this delay, time will be given for the accumulation
of some of the feeble remains of excitability in the sys
tem. 3rd In addition to the common remedies employed
to effect resuscitation, feeble or loud sounds applied
to the ear, are calculated to produce the most sal
utary effects. Life often lingers longest on the
ears, so says Dr Rush in his lectures on asphyxia.
This has been proved by the shrieks of distressed persons
sometimes calling their apparently dead friends to
life. By availing our selves of this fact, a new
and powerful remedy, may be added to those which
are now in common use for promoting resuscitation.
That the motions of life are destroyed last in the
brain (and of course in the vicinity of the ears),
I think highly probably from the placid or gloomy
countenance which succeeds death. They are probably
the effects of the pleasant or painful operations of
the mind, which survive the extinction of life in
other parts of the body.

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An
Inaugural Dissertation
on
Inflammation
Submitted
To the
Examination of the Provost
and
Professors of the University of Maryland.
By their
Friend
William H. Kirk
of
Lancaster County
Virginia
on the 3d
of
April
1838

In the prosecution of our medical Studies, there is no subject which presents itself to our view more frequently than inflammation or one for which we as Surgeons are more frequently called to treat, therefore a perfect acquaintance becomes necessary.

Inflammation has been divided by Surgeons into acute and chronic, simple, & complicated with disease; acute or healthy inflammation has been often termed phlegmon, and is of one kind only. Whilst malignant inflammation is subdivided into many kinds as erysipelatus, scrofulous venereal &c. &c.

Phlegmon, or healthy inflammation is that which has for its object the restoration of diseased parts. Malignant inflammation is that which has some morbid action added to that of a healthy, such as in carbuncles &c.

The general characteristicks of phlegmonous inflammation are an increased sensibility of the part, pain, preternatural redness, accompanied with tumefaction, and throbbing. The increased redness is supposed to arise from and increased flow of blood through the small arteries of the part, sometimes it may be dependant upon a generation of new vessels. Samuel Cooper says that the swelling is dependant upon a dilatation of the vessels, to a plethoric state of the arterial system & veins to the exudation of coagulation of lymph into the

interstices of the cellular substance and also to an interruption of the absorption.

With regard to the increased heat this seems to be immaginable, as the degree of heat scarcely ever surpass es the natural temperature of the body, but we may readily account for this when we remember the extreme sensibility of the nervous system, by which they convey false impressions.

The remote causes of inflammation are numerous consisting in those of a mechanical or chimical nature such as burns, wonds, splinters, acrid substances &c. Inflammation sometime arises as consiquent on some febrile disease acting upon the system and when this is the case is called symtomatic sometimes it seems to arise with out any obvious cause & then it is commonly called spontaniously or imperceptibly, as there can be no effect produced without there be a cause to produce that effect.

The proximate cause of inflammation has been a source of much theoretical speculation, it was supposed by the ancients that it was dependant on some morbid condition of the fluids, Whilst the moderns as Cullen and others, that it is dependant on a change of the vessels & not a disease of the fluids, The absurdity of the antients may be clearly seen from a local inflammation, for were it dependant upon a disease of the fluids, we could have no inflamma-

tion however slight without bringing the whole system into a state of disease. It seems more probable to depend upon a disease of the vessels, from the fact that new vessels are sometimes formed, this may be proved by tumours, which may be extirpated without occasioning much hemorage, when at the same time were we to cut into the tumour, the hemorage would be great. It seems to me that all inflammation must be dependant upon an increased action of the vessels in the part affected, for it cannot be doubted that there is more blood sent to the part when inflamed than when in a state of health, this seems clear from the circumstance, that if we cut into an inflamed part it will bleed much more freely, than when in a natural state, neither can this be done by any increased action of the heart, for the heart sends its blood equally to the whole system, but from this circumstance it will seem, that besides the elasticity peculiar to the arteries, themselves they have also a power of dilating and contracting of themselves, we can scarcely explain on any other principals, the increased flow of blood through the inflamed part.

It has been thought by some that it is dependant upon a spasm of the extreem vessels of the part, but I think that an effusion of lymph besides the increased size of the vessels would be sufficient to overturn such an idea as this.

A very peculiar circumstance attending phlegmonous inflammation, is that let it be situated, where it may as to what part soever it will always point externally If inflammation invades the sockets of the tooth the mucous will point externally, immediately in the vicinity of the cheek, than on the inner side of the alveolar process

Inflammation differs in their varieties in their progress and their termination, as they differ in their situation, position, structure, and functions of parts. Parts through which the blood circulates freely can undergo inflammation much better than are situated in different condition, except when the part is essential to life, and then though the part may be possessed with a great deal of vascularity still it is owing to the uniformity which is required for the support of health dependant upon a sound condition. Having now given the symptoms and causes as what we think the most reasonable, from some consideration and considerable study, we will now endeavour to give the treatment as recommended by the best modern Surgeons. In the treatment of inflammation the first to be considered is the removal of the remote cause for if there be a splinter or any foreign substance lodged in the flesh we should first extract that, and then we should have an eye to the proximate cause, it will seem at once from what has been said that

our principal motive must be to remove that cause
this is to be effected by those remedies which is necessary to subdue the increased action of the enlarged vessels.

Bleeding

As we have advanced the idea that inflammation is dependant upon an increased action of the blood vessels in the part effected; it will not be doubted that blood letting forms one of the most prominent agents in the reduction of this action, this should be done either by topical or general bleeding. Topical bleeding seems in many cases to be more effectual than general, when the part effected is local and does not bring the system into concern, topical bleeding is more beneficial than general, but when any part is effected which is essential to life then we should use general and topical both, thus where the brain is effected if the inflammation is not speedily subdued death will be the inevitable consiquence, we should use general blood letting when the part is not possessed with that power of reloration, which is peculiar to the muscles, as in tendons about the joints, also when suppuration would be the result and that perhaps to the destruction of the patient. Opthalmia is a case of this kind although it would not destroy the patients life, still the organ it-self would be destroyed, General blood letting should not be admited when the inflammation

is trivial and excited in an old debelitated subject When it takes place in a young and plethoric we should use the remidies as early in the disease as possible, when the action runs very high we should allways use general bleeding first, to make our topical remidies act the more effectual, we should draw the blood from a large surface, as to the quantity of blood to be taken we should be governed entirely by circumstances, the time of the disease when taken and the general excitement in the system, which may allway be told by the strongness and fulness of the pulse.

Purging

These form the next grand feature in the catalogue of our remidies for the cure of inflammation, they should be of the saline kind, they not only assist bleeding in diminishing the circulation, but they act by producing a secretion they may be used even when bleeding cannot be admited, the most common used is the Sul^{n} of Soda, Sul^{n} of magnesia, and the nitrate of potash.

Antimonials.

Nauseating doses of antimonials preparations are sometimes very benificial they act by removing the offensive dryness of the skin, and from the sympathy which exist through the nervous system diminishes diminishes the action of the enflamed vessels this is accomplished

by the nervia which is produced occasioning a tempo
rary debility and through these the progress of the in
flammation is subdued —

Opium

When there is great constitutional irritation together
with great pain opium may be employed although
in the most cases of inflammation opium cannot
be administered in account of its stimulating effe
cts.

Diet

This in the cure of inflammation is very essential. The
patient should be kept from all animal food, from
fermented & Spirituous liquors, a neglect on the part
of the Surgeon to enforce, and the patient to adhere
to a strict antiphlogistic regimen, often is the cause
of the inflammation terminating in that way which
brings reproach upon our science and in some
cases to the destruction of our patients

Cold applications

This remedy has been recommended from the know
ledge that heat or rather apparent heat has always
been the concomitants of inflammation, and by
the abstraction of that heat the part effected will be
restored, this is done by keeping up a constant eva
poration on the surface. The remidies which are
generally employed by Surgeons are of an astringent
or sedative nature, such as the acetate of Lead with

ce in water. Mr Cooper recommends the following formula acetate of lead ℥ss vinegar ℥iv. distilled water ℔ii, but I am inclined to think that the water & vinegar containing ace the virtues, because I cannot perceive what the vertues of the lead can consist - as it - cannot have any specific action on the part, but - the whole benifit must be owing to the evaporation which takes place, as the mode of operandi of the lead has not as yet been explained. Doctor Smith, the professor of Surgery in this institution has recommended an evaporating lotion composed of Spirit and water both equal parts, which has much the advantage of the lead & water in subduing the inflammation, as I have had the opportunity of seeing the wonderfull effects during the last winter in ward in our Infirmery of a man who had punctured his foot with a nail, when he was brought into the Infirmery, there was a violent inflammation taken place and in the course of forty eight hours all the symptoms were almost subdued. Again I have seen the formula which cooper recommends fail entirely

Warm application

this has been also recommended but it seems strange that any two remidies so very opposite to each other could be employed in the same case with advantage but so it is experience has shown that it is so, and it is thought by some surgeons that it is dependent

on some peculiar idiosyncrasy of the patients constitution, or some difference in the constitution in the part effected. Of the warm application emollient poltices have been the most frequently employed & the best is that made of Linseed meal and warm water this is made by putting the meal into the water untile they are of a proper consistance to form a poltice and then add a little oil to prevent the poltice from becoming hard

Termination of Inflammation

Inflammation after continueing for sometime, disappears without any apparent cause, or exciting a disposition to form pus, or runs on to such a high state of inflammation as to terminate at last in the entire death of the part. The first is called resolution, the second called Suppurating, & the third and last is called mortification.

First or Resolution

The most fortunat way in which inflammation can terminate is resolution this consist in a spontaneous cessation of all the symptoms, a subsidain of the pain Swelling, throbbing & heat of the part

Second or Suppuration

Suppuration is the next most frequent termination of inflammation this consist in the formation of pus which modifys the symptoms rather than an entire cessation of them

Mortification

The worst manner in which inflammation can terminate is in mortification but luckely it is the most rare; this consists in the entire death of the part. I shall conclude with the subject here leaving a particular description of those three varieties alone leaving that they be long more strictly to Symptomatic fever than to this place.

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An

Inaugural Dissertation

on

Necrosis

presented to the Faculty of the

University of Maryland

for

the degree of Doctor of Medicine

by

George F. Carmichael

of

Virginia

1828.

A Dissertation on Necrosis.

5-65

The strict interpretation of this term is the death of some portion of the bony structure, but is applied by Surgeons to a disease characterized by peculiar symptoms, a frequent termination of which is the death or exfoliation of a portion of bone.

This disease commences with an acute inflammation of the bone itself or of its periosteum, accompanied with violent pain which is not at first referred to the immediate seat of the attack but to the nearest joint, it however locates itself finally on the part inflamed. The symptomatic fever which generally occurs at the same time with the pain, is of a highly inflammatory character. The termination of the local affection, is most frequently in suppura-

tion. The matter is deposited between the ex-
ternal periosteum and the bone. If the dis-
ease be located in the shafts of the long
bones, at the same time that the matter forms
beneath the external periosteum, there is a
corresponding collection between the internal
lining and the bone. This circumstance
has been repeatedly ascertained by the use
of the trephine.

Shortly after the attack the limb becomes
swollen which is uniform until the matter
escapes from beneath the periosteum, when
the swelling is more circumscribed and con-
fined to the immediate seat of inflam-
mation. At this period there is a subsi-
dence of the severe pain & fever in some
degree, but they do not leave the patient
entirely. The death of the bone in this disease

is not attributable to any peculiar malignity of the inflammation, but to the vessels which give nourishment to it, being destroyed by the intervention of matter between it & its periosteum.

When the matter contained beneath the periosteum, has made its way to the surface and that within the cavity of the bone, has escaped through fissures in the sand, relieving the parts from irritation and pressure the symptomatic fever in a great degree subsides, if however the collection be considerable and the distruction of bone extensive, hectic fever supervenes, showing a continuance of irritation tho' changed, as to its character.

The process instituted for the purpose of removing the dead bone, depends upon the

extent of injury. For instance if merely a small portion, situated on the shaft of a long bone be necrosed, granulations will shoot from the sound and living bone, and as occurs in the mortification of the soft parts separate the dead from the living portion, and finally urge it through the opening previously formed, and disengage it from the body, this is more likely to happen when the soft parts have been freely divided at the beginning of the disease.

When the whole circumference is destroyed it is covered by an osseous structure which envelops the sequestra and is attached to the sound & living portions not however embracing it closely, and thus giving the limb an enlarged appearance,

Necrosis is almost exclusively confined to young persons seldom or never occurring under five or over twenty two.

No bone in the human system is exempt from this disease, long bones however are more liable to its attacks, and of these the Tibia more particularly, The articulations are never assailed by this kind of inflammation in the first instance, sometimes however the joints are secondarily affected from the disease being communicated to them along the shafts of the long bones, where it first existed.

The line of seperation is often accurately defined by the junction of the shaft & epiphysis of the bone, the articular portion remaining uninjured, it sometimes happens however that the disease reaches the joint and matter is formed when it becomes necessary to Amputate the limb to

and the life of the patient,

Necrosis is not always confined to one bone, it may occur simultaneously in remote parts or successively which is more common, In regard to general prognosis a very great majority of patients survive the attack after long confinement and protracted suffering, It sometimes proves fatal but generally early in the attack from the high degree of symptomatic fever and constitutional irritation,

Diagnostic Symptoms according to Dr Smith. "The pain" As the disease say this Gentleman is an acute inflammation characterized by the peculiar vital properties of the parts affected many of the symptoms must be analagous to those of other inflammatory affections, he has often known it to be mistaken and for a considerable time treated for acute Rheumatism, even

althó' suppuration may have been observed.
It frequently happens that when the disease fix-
-es on one of the long bones and near its ex-
-tremity the pain is complained of in the ad-
-jacent joint, it is not long however confined
to the joint, but fixes itself in the inflamed
part. This circumstance of pain referred
to the joint has often caused the disease
to be denominated Rheumatism."

The pain experienced in Necrosis is extreme-
-ly acute, unremitting, and not much in-
-fluenced by the motions nor position of the
limb. The pain is often antecedent to the
swelling, and when the latter first occurs
it is generally diffused over a considerable
part of the limb, especially below the part
affected. The surface is rather firm to the
touch but the skin is not discoloured till
after matter is formed and advanced tow-

ards the surface.

The symptomatic fever is coeval with the pain both usualy occurring on the same day, the pulse both frequent and quick the stroke sudden and artery small and hard to the touch, At first the patient has occasional chills but when he complains of a sensation of cold the skin to another person feels hot. The pain is so violent that he gets little or no sleep, during the night he is often delirious. The tongue is furred with a soft white coat the face is not flushed but rather pale with the exception of occasional red spots on the cheeks. The appetite for food is lost the thirst considerable the stomach and bowels are not so much affected as in other febrile diseases.

It has been before observed that the oppression of the pain in the early stage of the disease

has caused necrosis to be sometimes confound-
-ed with Rheumatism. Most even of its early
symptoms however are very different from those
of that disease, the symptomatic fever and
constitutional irritation come on sooner after
the local attack and are much more se-
-vere, the pulse smaller, harder, and much
more easily compressed, and finally supp-
-puration occurring removes all ambiguity.
Necrosis moreover usually attacks at that
period of life, when rheumatism is not li-
-able to occur. It is distinguishable from
Typhus by the local affection, by the pulse
which is harder and less easily compressed
and by its not being attended with so
much stupor.

Causes. The inflammation which produces
necrosis is often excited by blows and injuries
inflicted upon the limbs, sudden suppression of

perspiration, and emersion in cool water when the body is warm, it however often attacks without any obvious exciting cause, by which the diathesis is developed or concentrated upon a particular part.

Treatment. In the treatment of this disease the first step, as in all other inflammatory diseases should be to effect a resolution, The remedies however which are most generally employed as Venesection, cathartics emitics blisters, evaporating lotions, cataplasms &c, have rarely succeeded in preventing suppuration. The most efficient remedies as directed and practised by Professor Smith of N. Haven is a free incision of the soft part, and periosteum down to the bone through the whole extent of the inflammation, thus reducing the disease to a simple incised wound, which is to

be treated accordingly.

In the second stage of the disease when matter has formed beneath the periosteum the cure may still be effected without the loss of bone. In this stage of the disease an incision should be made thro' the soft parts as before directed and the periosteum divided as far as its seperation from the bone, and a portion of the bone be cut out or perforated in the denuded part down to the medullary substance, that the matter collected between that substance and the bone, may escape and thus the death of the bone prevented. The best instrument for perforating the bone is a small trephine.

In the third stage when the matter has made its escape through the periosteum and obtained a lodgment in the soft parts, the treatment is precisely the same

as in the second stage, but the favourable result is by no means so certain, as the circulation in it, may have been too long destroyed, or the separation of the dead and living bone commenced. Nevertheless however as in the former case the incission in the soft parts should be made, taking care, to avoid important parts, such as tendons, nerves and bloodvessels, this will not only give vent to the matter contained within, but facilitate the expulsion of the bone, if its distruction should have been extensive.

The general treatment consists in cooling purgatives (nauseating) doses of Antimony opium sufficient to allay irritation and procure rest.